

THE ARCHITECTS' JOURNAL



standard contents

every issue does not necessarily contain
all these contents, but they are
the regular features which
continually recur.

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★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to I one week, I to Z the next. In all cases where the town is not mentioned the word LONDON is implicit in the address.

| | | |
|-----------|--|----------------------|
| AA | Architectural Association, 34/6, Bedford Square, W.C.1. | Museum 0974 |
| AAI | Association of Art Institutions. Secy.: W. Marlborough Whitehead, "Dyneley," Castle Hill Avenue, Berkhamstead, Herts. | |
| ABS | Architects' Benevolent Society, 66, Portland Place, W.1. | Langham 5721 |
| ABT | Association of Building Technicians, 5, Ashley Place, S.W.1. | Victoria 0447-8 |
| ACGB | Arts Council of Great Britain, 4, St. James' Square, S.W.1. | Whitehall 9737 |
| ADA | Aluminium Development Association, 33, Grosvenor Street, W.1. | Mayfair 7501/8 |
| APRR | Association for Planning and Regional Reconstruction, 34, Gordon Square, W.C.1. Euston 2158-9 | |
| ArchSA | Architectural Students' Association, 34/36, Bedford Square, W.C.1. | |
| ARCUK | Architects' Registration Council, 68, Portland Place, W.1. | Langham 8738 |
| AScW | Association of Scientific Workers, 15, Half Moon Street, Piccadilly, W.1. | |
| BAE | Board of Architectural Education, 66, Portland Place, W.1. | Langham 5721 |
| BATC | Building Apprenticeship and Training Council, Lambeth Bridge House, S.E.1. | |
| BC | Building Centre, 26, Store Street, Tottenham Court Road, W.C.1. | Museum 5400 |
| BCC | British Colour Council, 13, Portman Square, W.1. | Welbeck 4185 |
| BCCF | British Cast Concrete Federation, 17, Amherst Road, Ealing, W.13. | Perivale 6869 |
| BCIRA | British Cast Iron Research Association, Alvechurch, Birmingham. | Redditch 716 |
| BDA | British Door Association, 10, The Boltons, S.W.10. | Flaxman 7766 |
| BEDA | British Electrical Development Association, 2, Savoy Hill, W.C.2. | Temple Bar 9434 |
| BIA | British Ironfounders' Association, 145, Vincent Street, Glasgow, C.2. | Glasgow Central 2891 |
| BIAE | British Institute of Adult Education, 29, Tavistock Square, W.C.1. | Euston 5385 |
| BID | Building Industries Distributors, 52, High Holborn, W.C.1. | Chancery 7772 |
| BINC | Building Industries National Council, 11, Weymouth Street, W.1. | Langham 2785 |
| BOT | Board of Trade, Millbank, S.W.1. | Whitehall 5140 |
| BRS | Building Research Station, Bucknalls Lane, Watford. | Garston 2246 |
| BSA | Building Societies Association, 14, Park Street, W.1. | Mayfair 0515 |
| BSI | British Standards Institution, 28, Victoria Street, S.W.1. | Abbey 3333 |
| BTE | Building Trades Exhibition, 4, Vernon Place, W.C.1. | Holborn 8146/7 |
| CABAS | City and Borough Architects Society, C/o Johnson Blackett, F.R.I.B.A., Borough Architect, Town Hall, Newport, Mon. | Newport 3111 |
| CAS | County Architects Society, C/o F. R. Steele, F.R.I.B.A., County Hall, Chichester. | Chichester 3001 |
| CCA | Cement and Concrete Association, 52, Grosvenor Gardens, S.W.1. | Sloane 5255 |
| CCP | Council for Codes of Practice, Lambeth Bridge House, S.E.1. | Reliance 7611 |
| CDA | Copper Development Association, Kendals Hall, Radlett, Herts. | Radlett 5616 |
| CIAM | Congrès Internationaux d'Architecture Moderne, Dolderal, 7, Zurich, Switzerland. | |
| COID | Council of Industrial Design, Tilbury House, Petty France, S.W.1. | Whitehall 6322 |
| CPRE | Council for the Preservation of Rural England, 4, Hobart Place, S.W. | Sloane 4280 |
| CUC | Coal Utilization Council, 3, Upper Belgrave Street, S.W.1. | Sloane 9116 |
| CVE | Council for Visual Education, 13, Suffolk Street, Haymarket, S.W.1. | Reading 72255 |
| DGW | Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1. | |
| DIA | Design and Industries Association, 13, Suffolk Street, S.W.1. | Reliance 7611 |
| DOT | Department of Overseas Trade, 35, Old Queen Street, S.W.1. | Whitehall 0540 |
| EJMA | English Joinery Manufacturers' Association (Incorporated), Sackville House, 40, Piccadilly, W.1. | Victoria 9040 |
| EPNS | English Place-Name Society, 7, Selwyn Gardens, Cambridge. | |
| FAS | Faculty of Architects and Surveyors, 8, Buckingham Palace Gdns., S.W.1. | Regent 4448 |
| FASSC | Federation of Association of Specialists and Sub-Contractors, 5, Arundel Street, Strand. | Sloane 2837 |
| FBI | Federation of British Industries, 21, Tothill Street, S.W.1. | Temple Bar 6633 |
| FC | Forestry Commission, 25, Savile Row, W.1. | Whitehall 6711 |
| FCMI | Federation of Coated Macadam Industries, 37, Chester Square, S.W.1. | Sloane 1002 |
| FDMA | The Flush Door Manufacturers Association Ltd., Trowell, Nottingham. | Ilkeston 623 |
| FLD | Friends of the Lake District, Pennington House, nr. Ulverston, Lancs. | |
| FMB | Federation of Master Builders, 26, Great Ormond Street, Holborn, W.C.1. | Ulverston 201 |
| FPC | The Federation of Painting Contractors, St. Stephen's House, S.W.1. | Chancery 7583 |
| FRHB | Federation of Registered House Builders, 82, New Cavendish Street, W.1. | Whitehall 3902 |
| FS (Eng.) | Faculty of Surveyors of England, Buckingham Palace Gdns., S.W.1. | Langham 4041 |
| GC | Gas Council, 1, Grosvenor Place, S.W.1. | Sloane 2837 |
| GG | Georgian Group, 27, Grosvenor Place, S.W.1. | Sloane 4554 |
| HC | Housing Centre, 13, Suffolk Street, Pall Mall, S.W.1. | Sloane 2844 |
| IAAS | Incorporated Association of Architects and Surveyors, 75, Eaton Place, S.W.1. | Whitehall 2881 |
| ICA | Institute of Contemporary Arts, 17-18 Dover Street, Piccadilly, W.1. | Sloane 5615 |
| ICE | Institution of Civil Engineers, Great George Street, S.W.1. | Grosvenor 6186 |
| IEE | Institution of Electrical Engineers, Savoy Place, W.C.2. | Whitehall 4577 |
| IES | Illuminating Engineering Society, 32, Victoria Street, S.W.1. | Temple Bar 7676 |
| | | Abbey 5215 |

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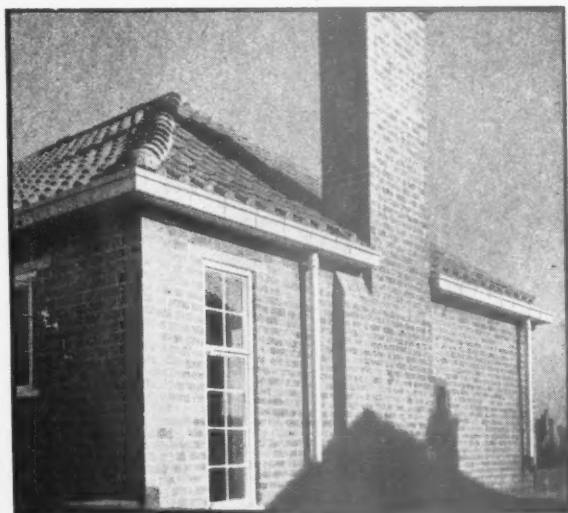
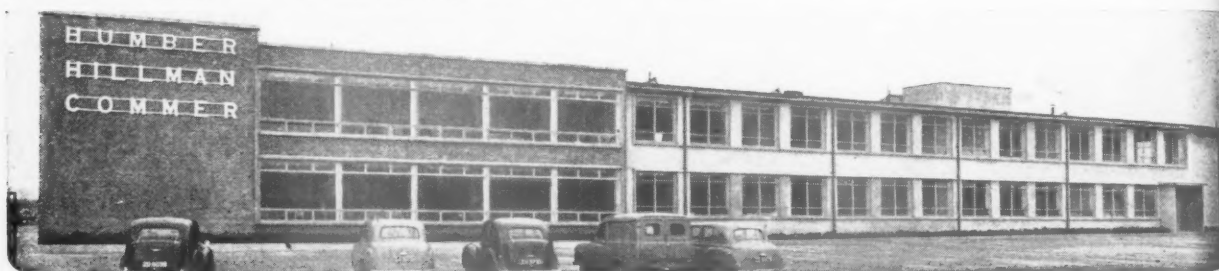
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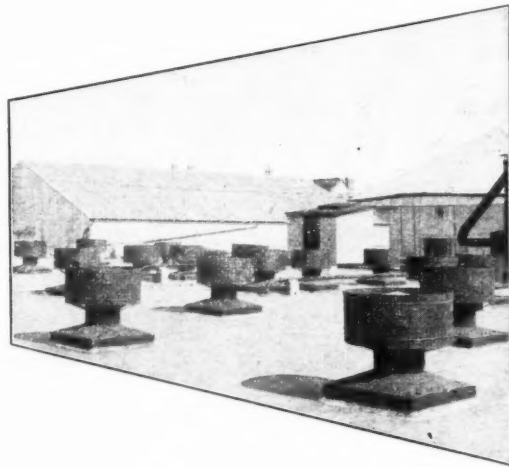
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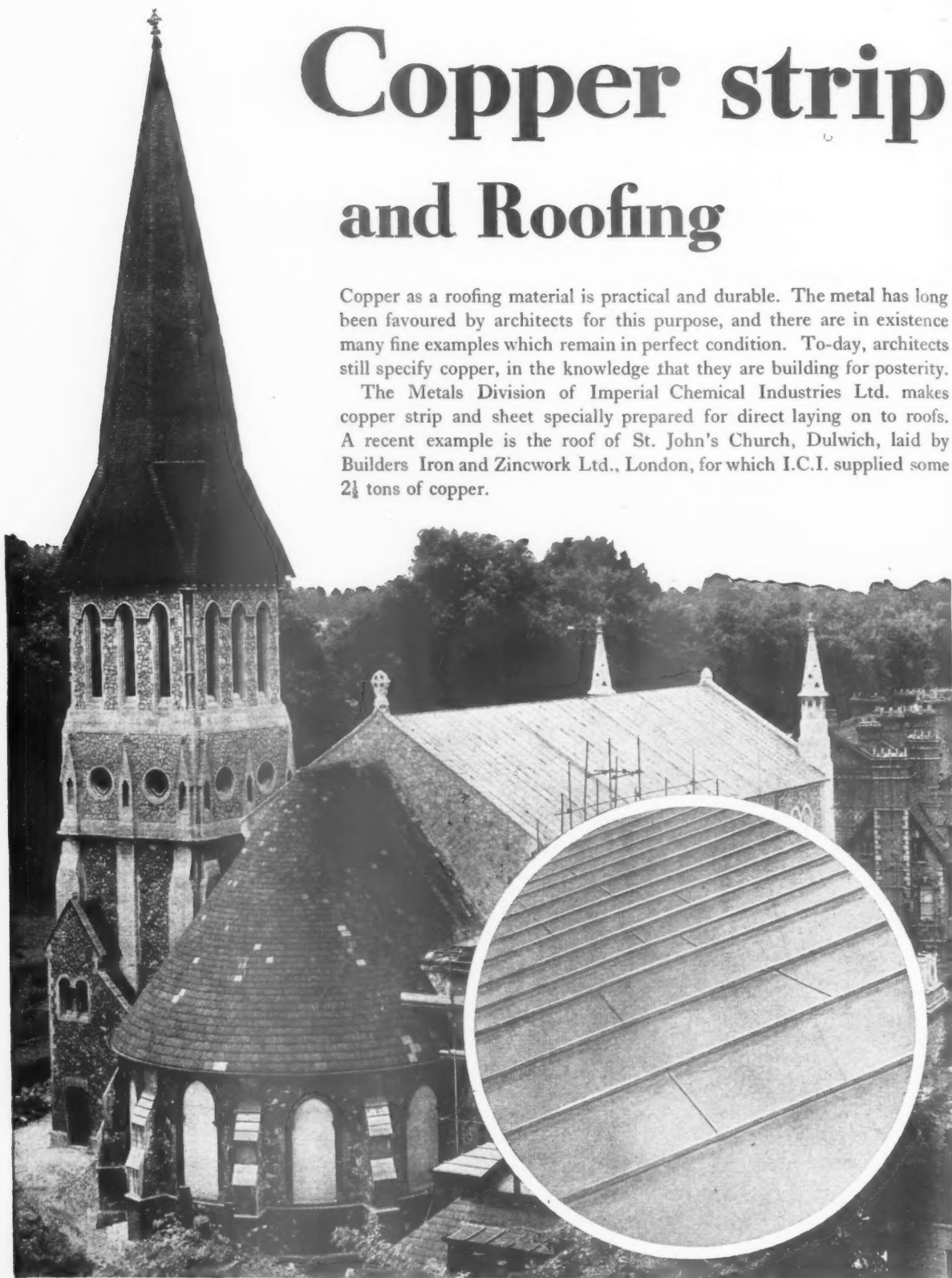
ER



Copper strip and Roofing

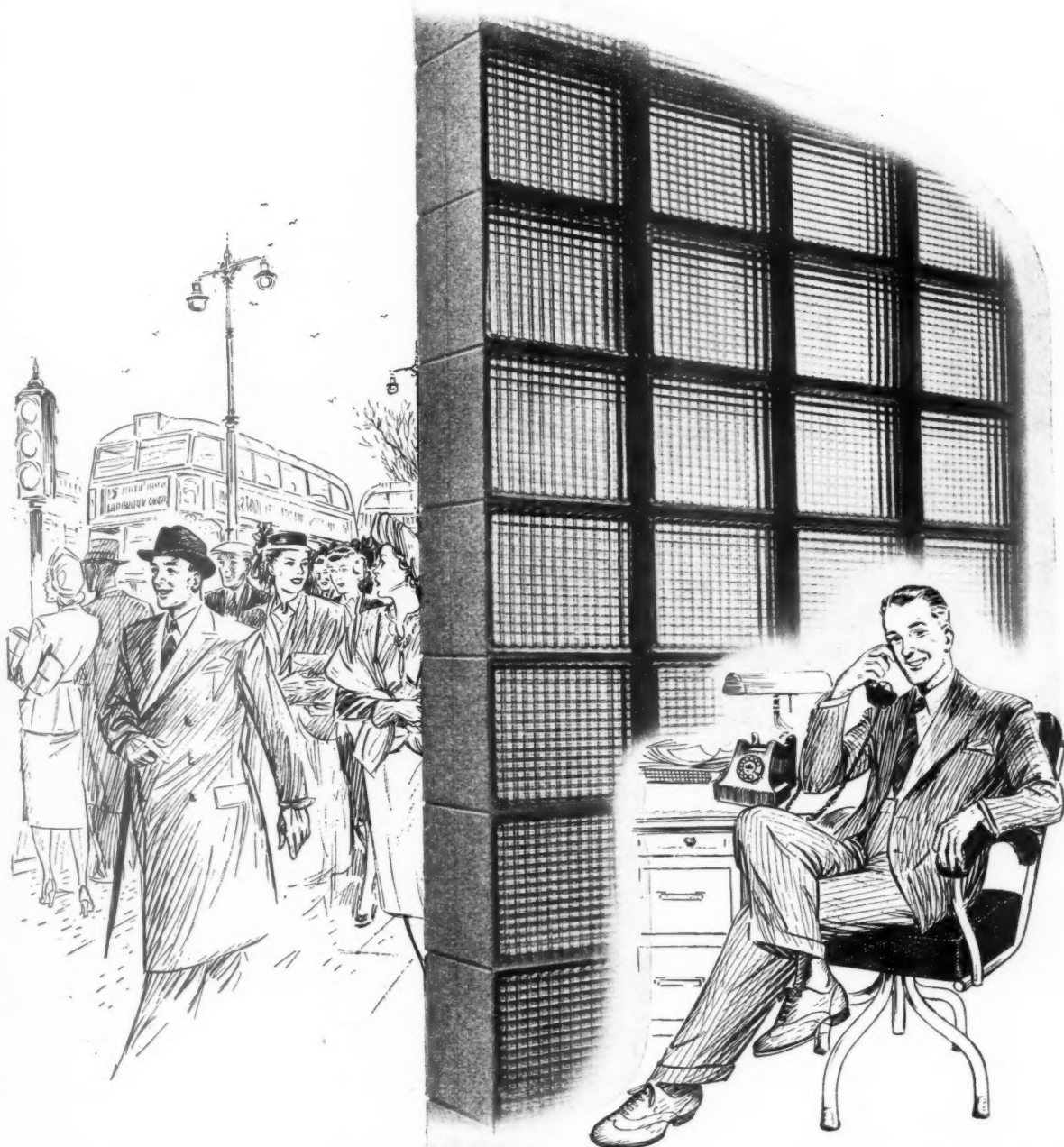
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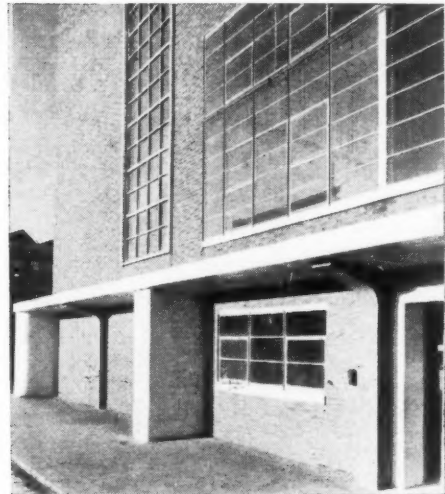


FACTORY AT LUTON

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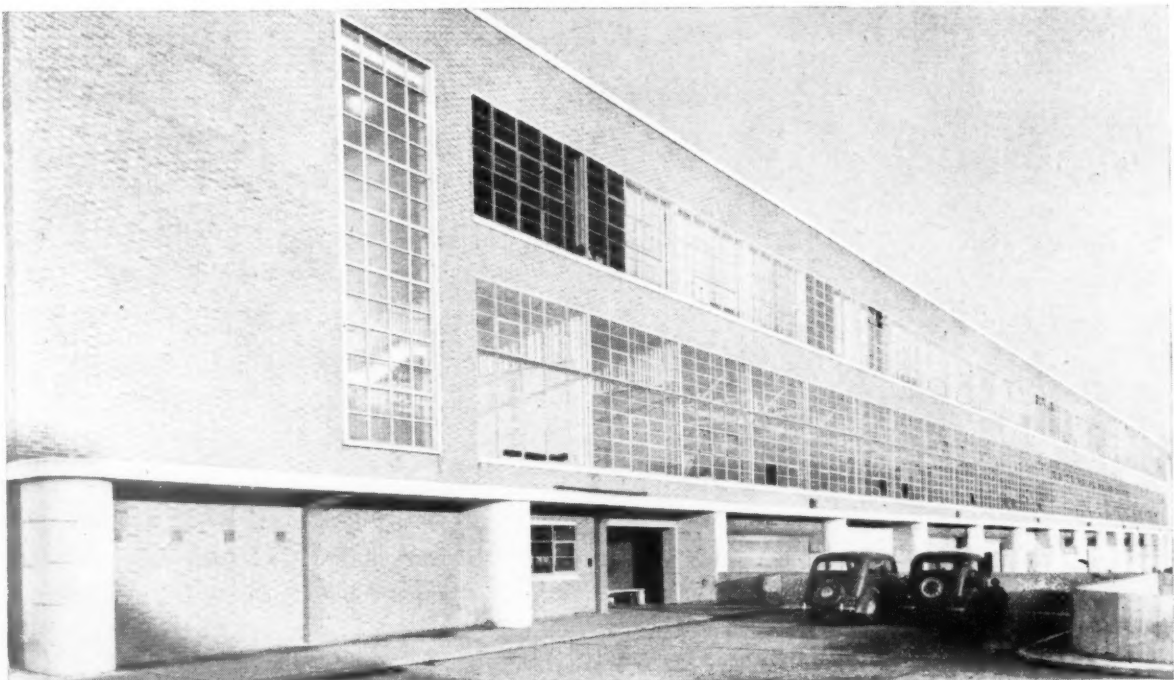
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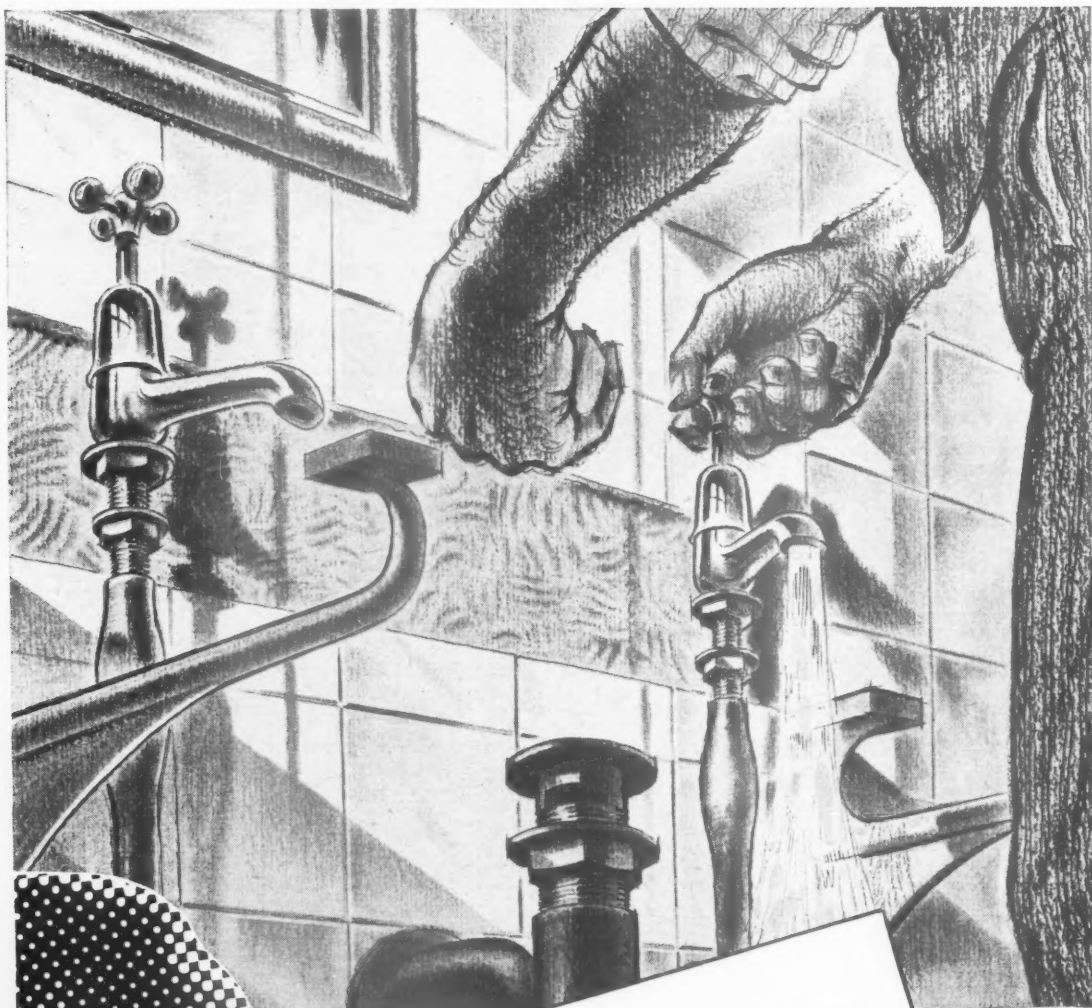


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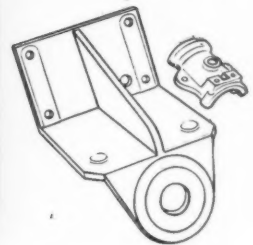
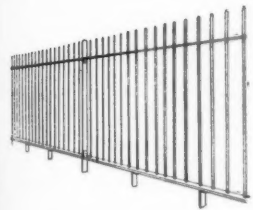
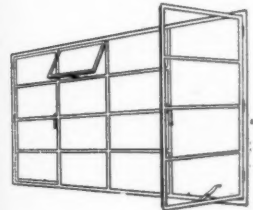
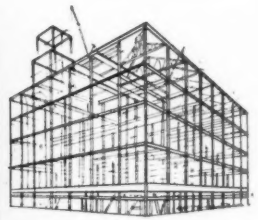
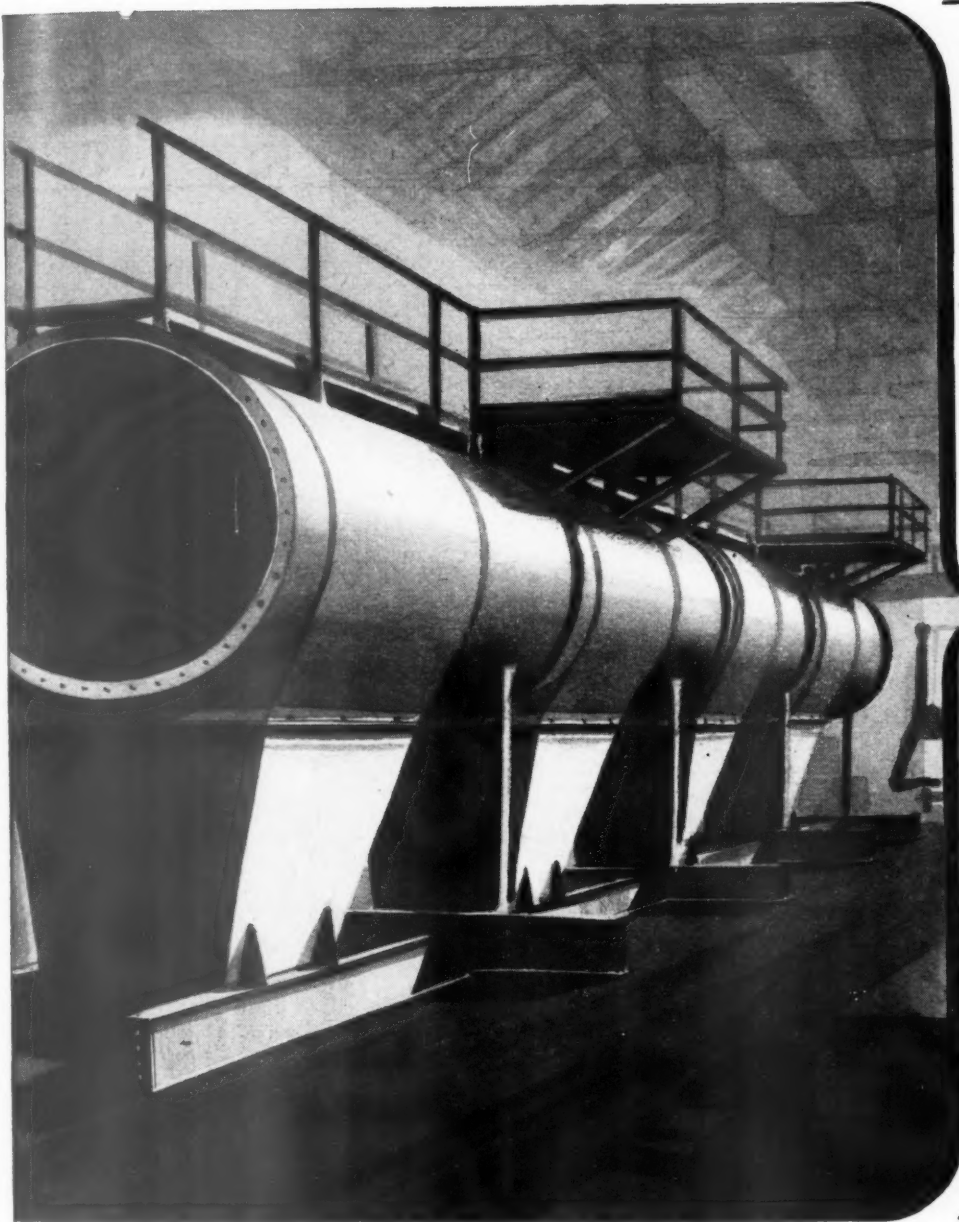


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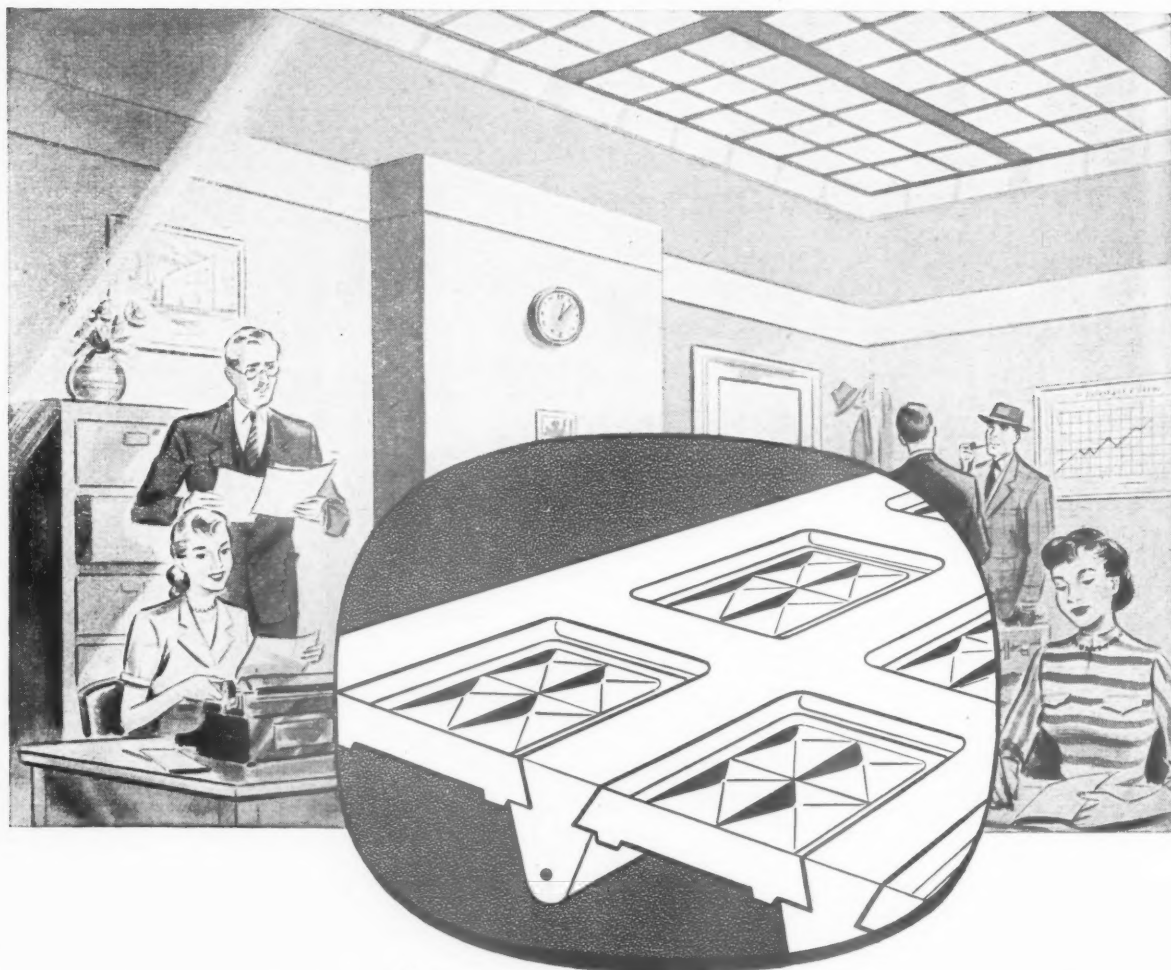
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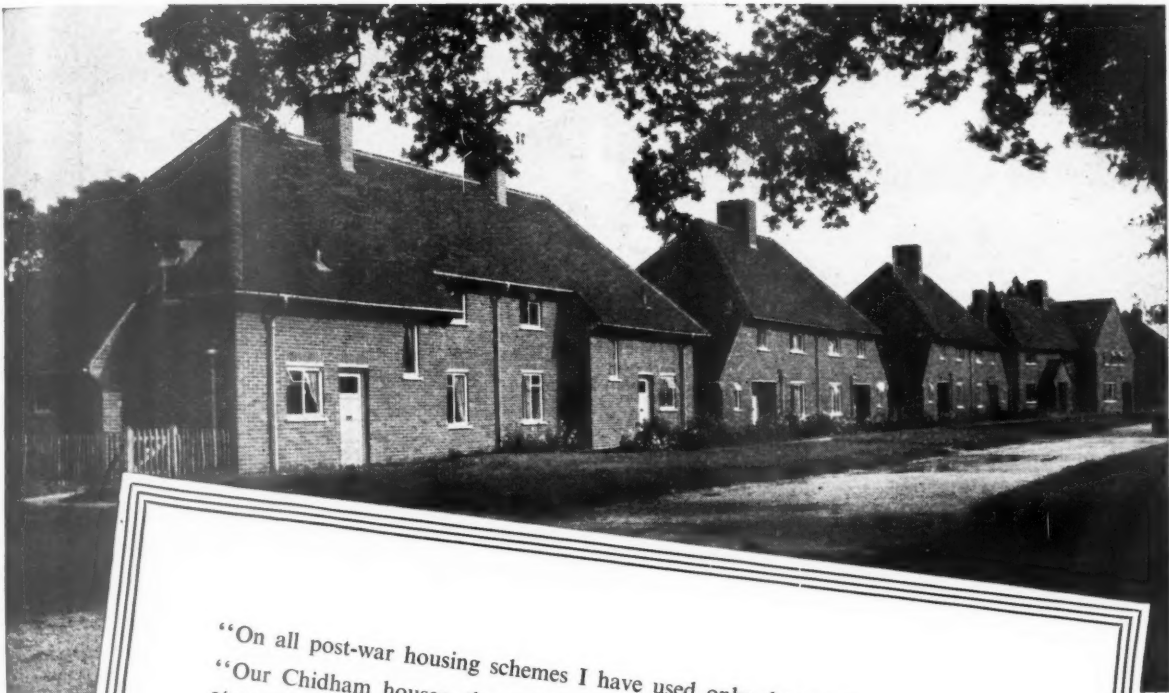
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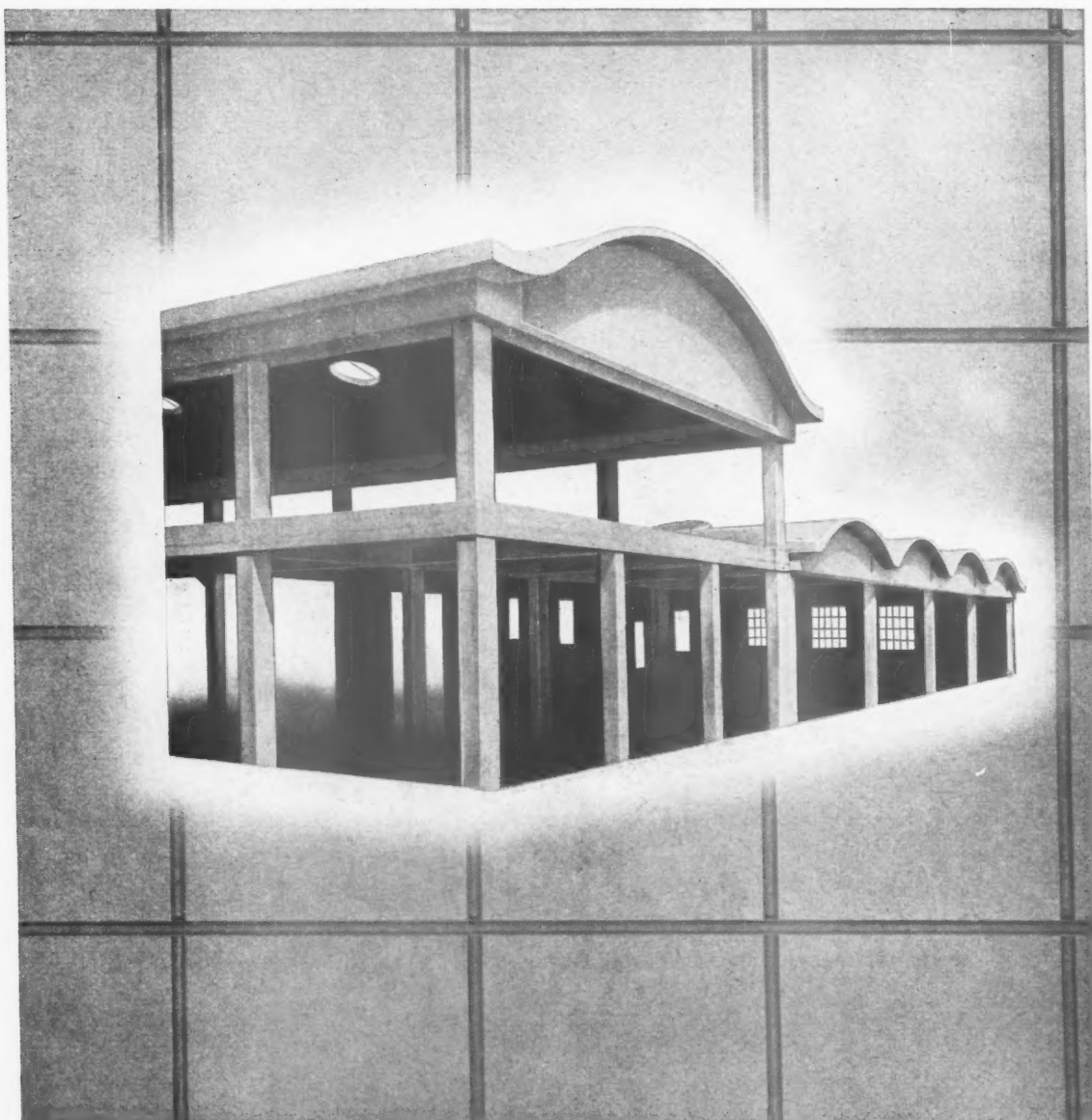
Extract from a letter received from Mr. J. K. Lawson, F.R.I.C.S., A.M.I.S.E.,
Engineer and Surveyor, Rural District Council, Chichester.

* Ministry Housing Medal.



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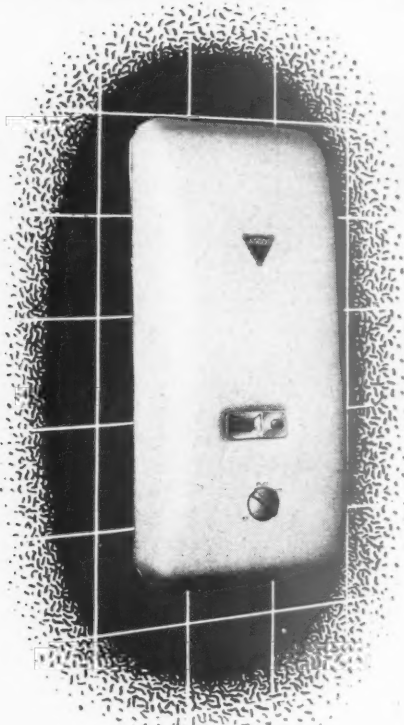
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Particular advantages of the Ascot 715

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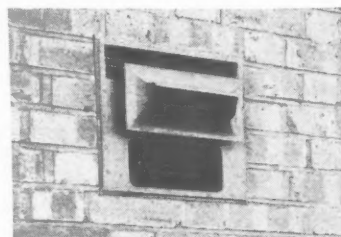
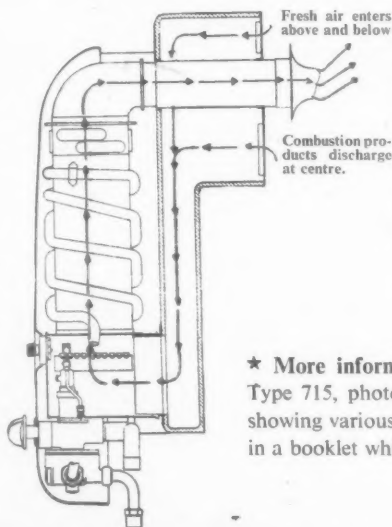


The new Ascot 715 multipoint is the first balanced flue gas water heater to go into production anywhere in the world. Once again Ascot leads the way! Once again Ascot helps the gas industry to maintain the position of gas as the best and most economical fuel for providing an instant, endless supply of hot water!

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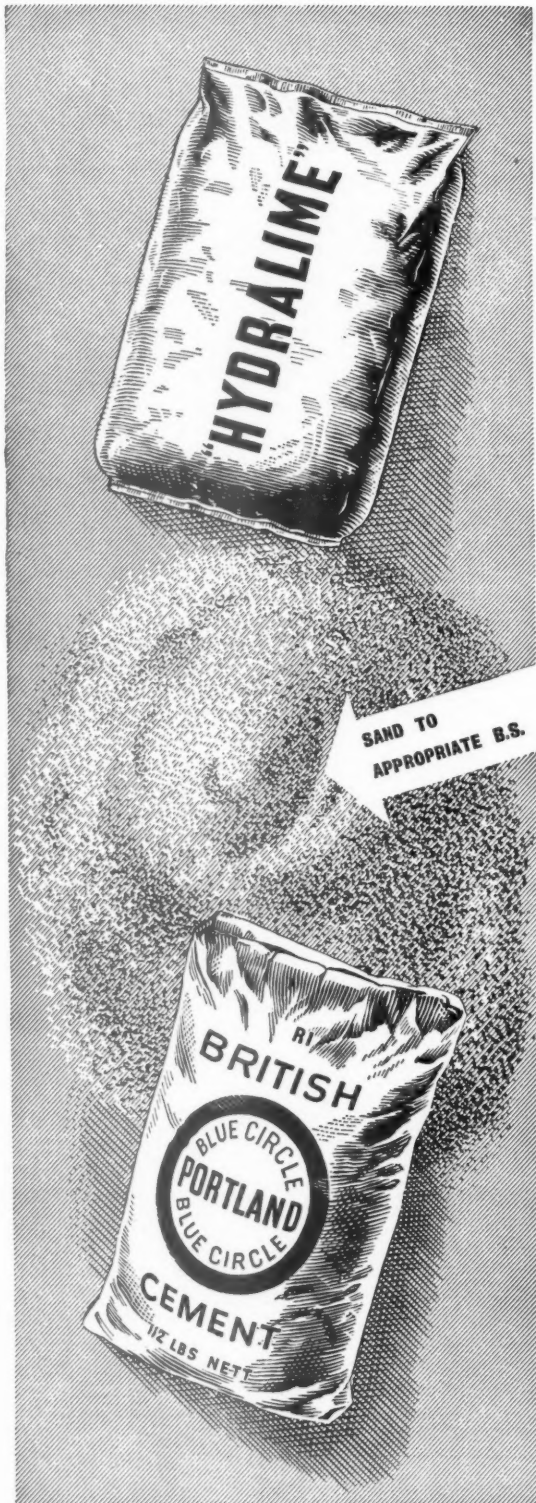
A FULL INSTANTANEOUS MULTIPOINT SERVICE similar to that of the popular Ascot 709 is given by the 715. It also has a stainless steel burner which has proved so successful in resisting corrosion and maintaining a high standard of efficiency.



The terminal can be fitted even in proximity to overhanging, or other projections. There is no flue pipe or cowl.

★ **More information.** A detailed explanation of the Type 715, photographs, a specification and drawings showing various methods of installation, are contained in a booklet which will be sent on request.

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GCI1

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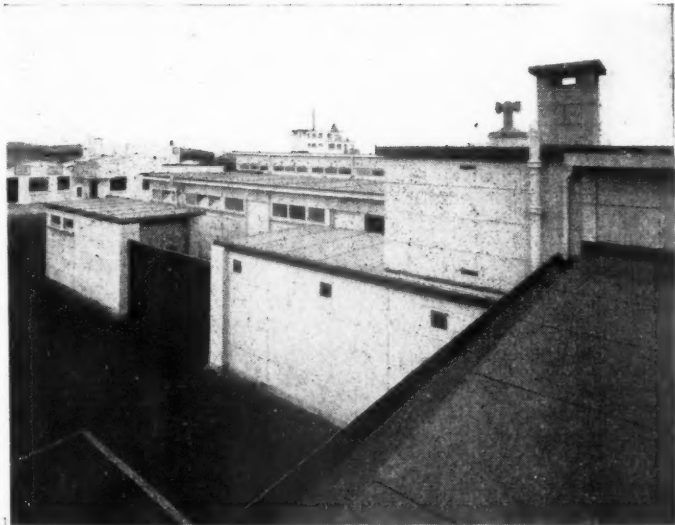
Vermiculite



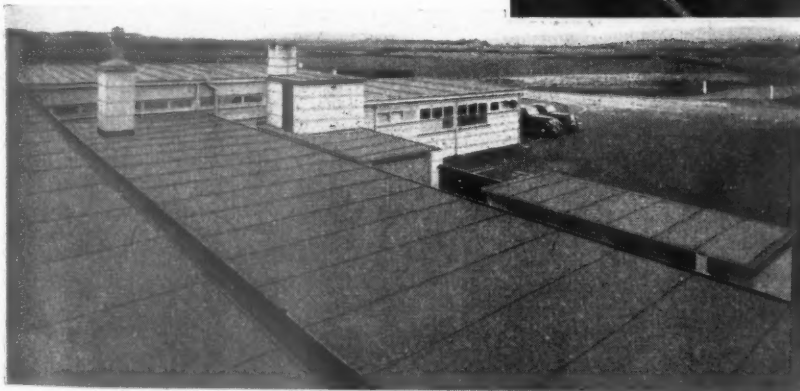
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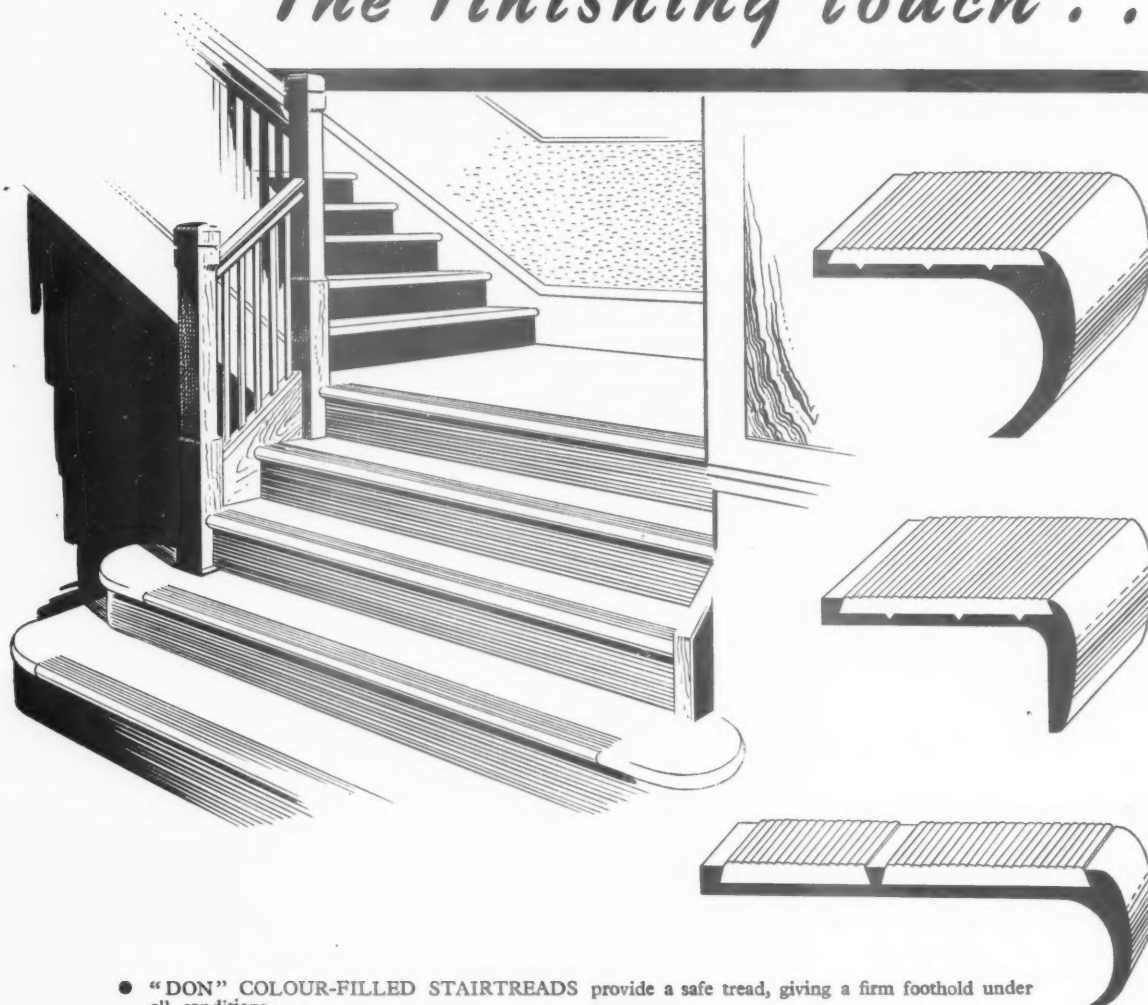
Roof of Ronaldsway Airport, I.O.M. screeded with "KISOL" Vermiculite.



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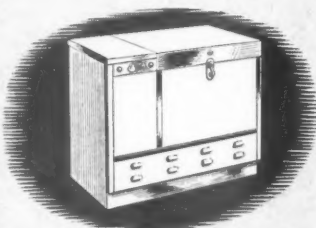
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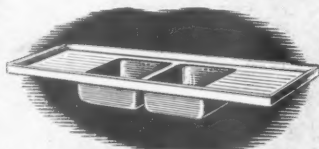
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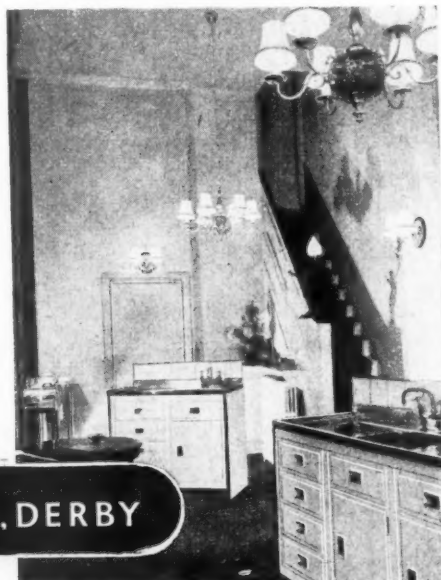


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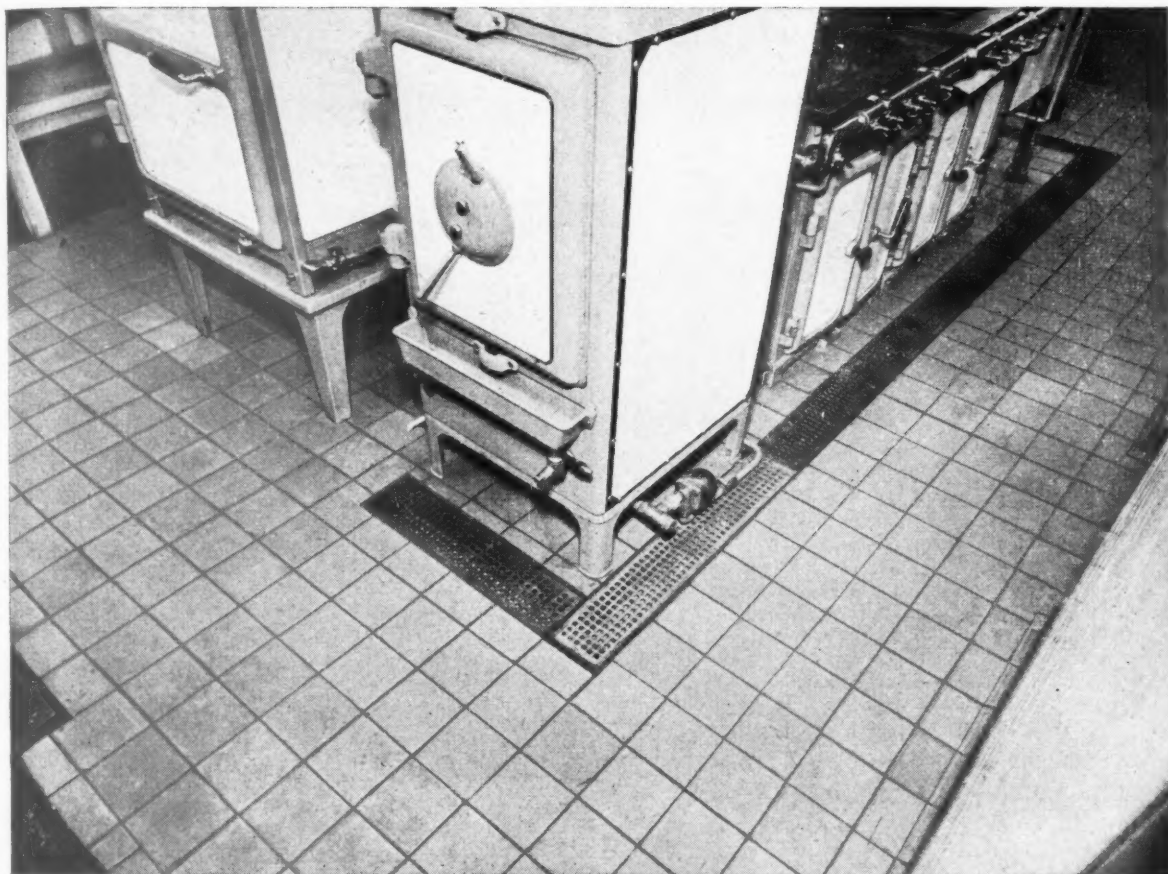
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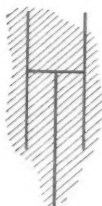
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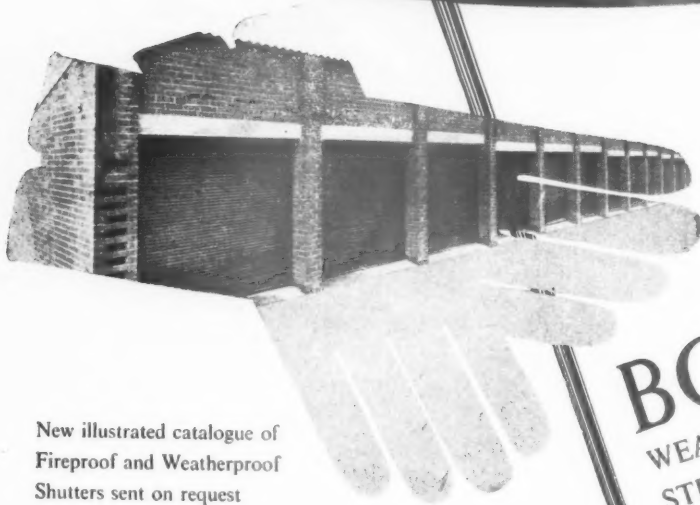
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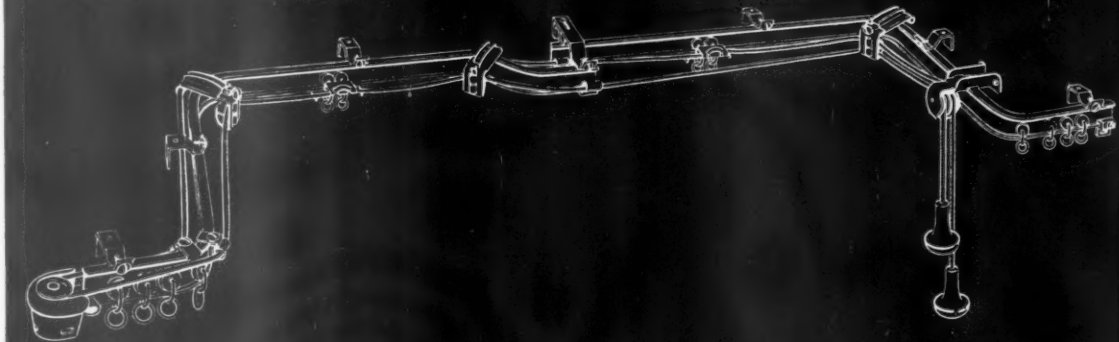
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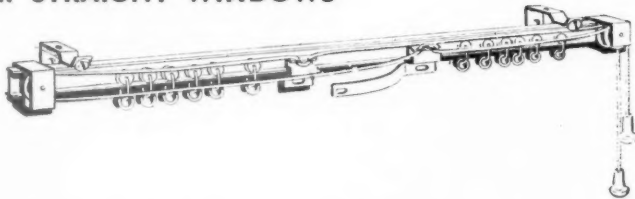
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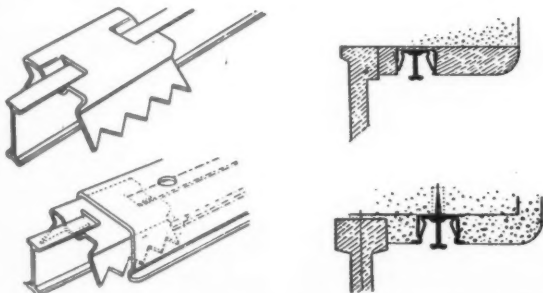
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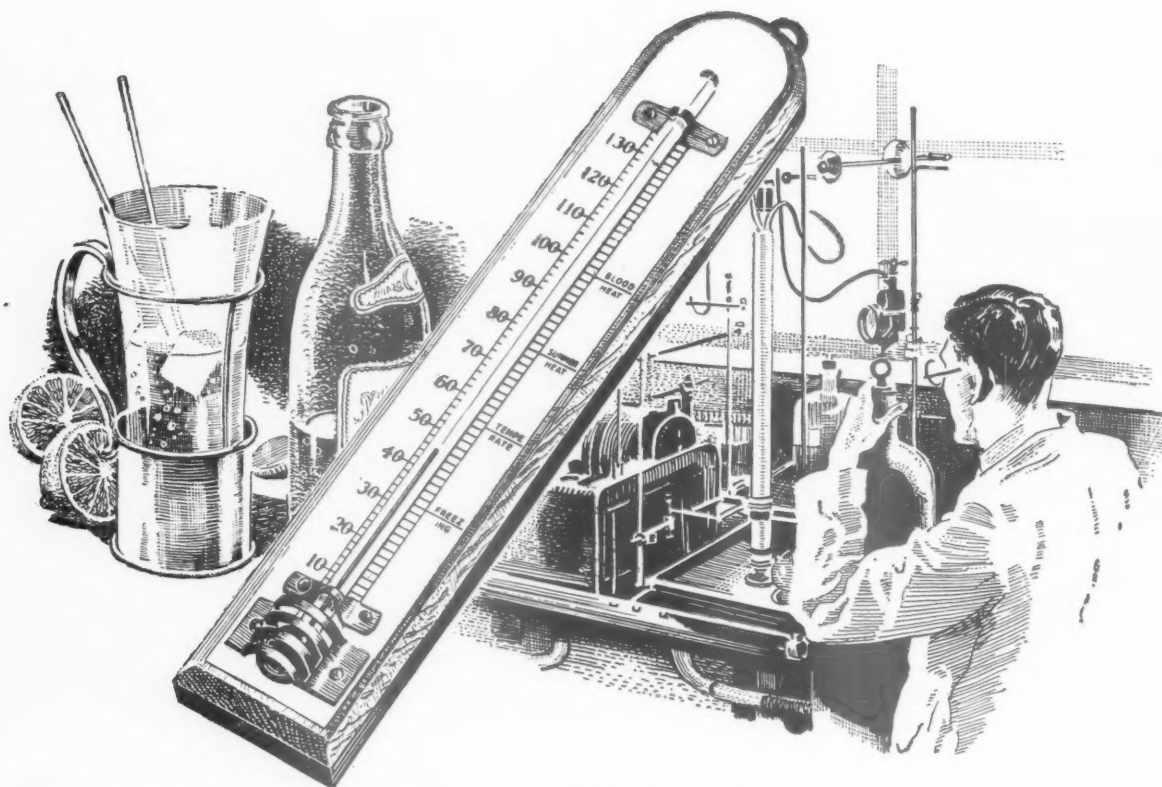
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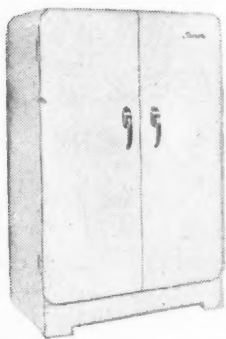
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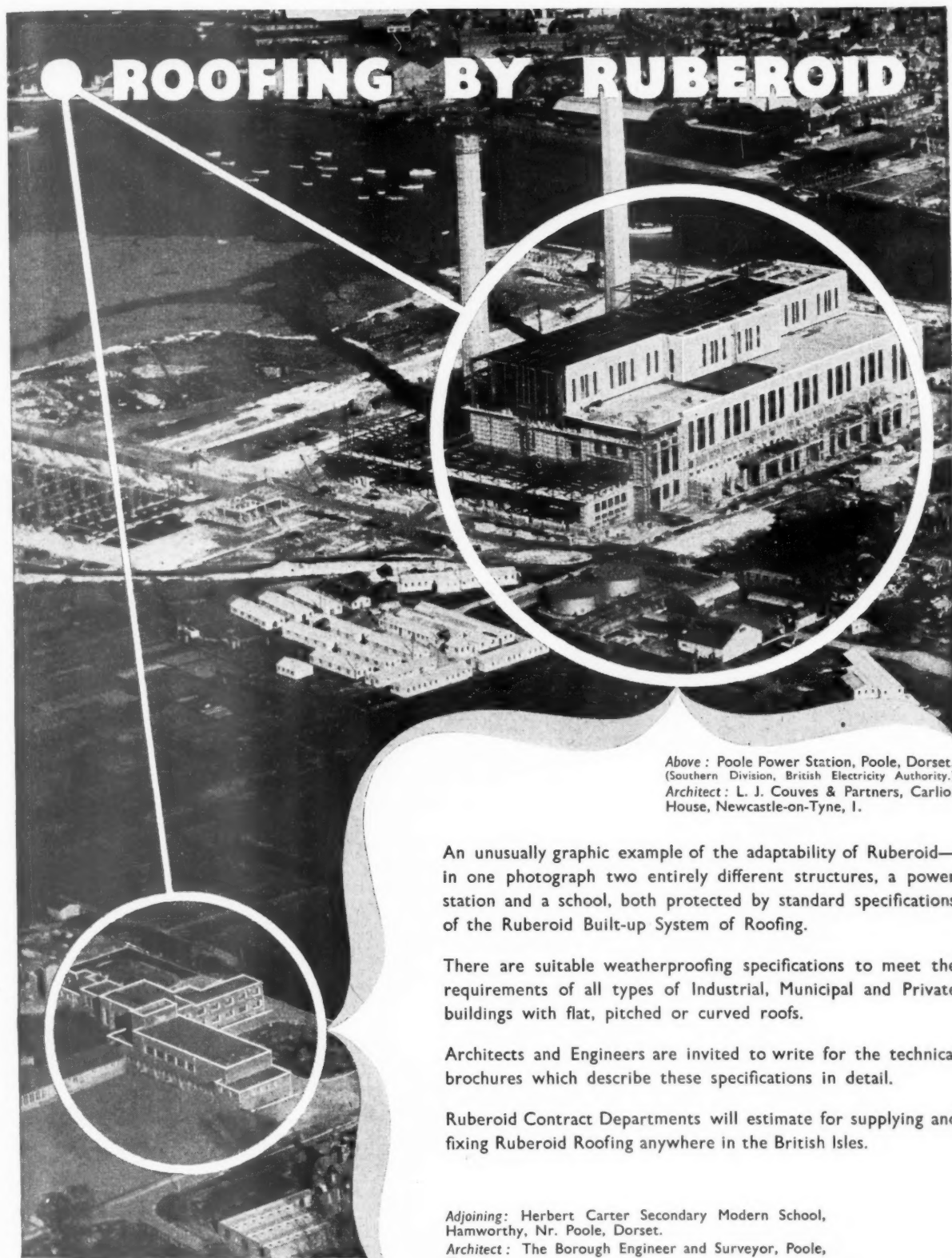


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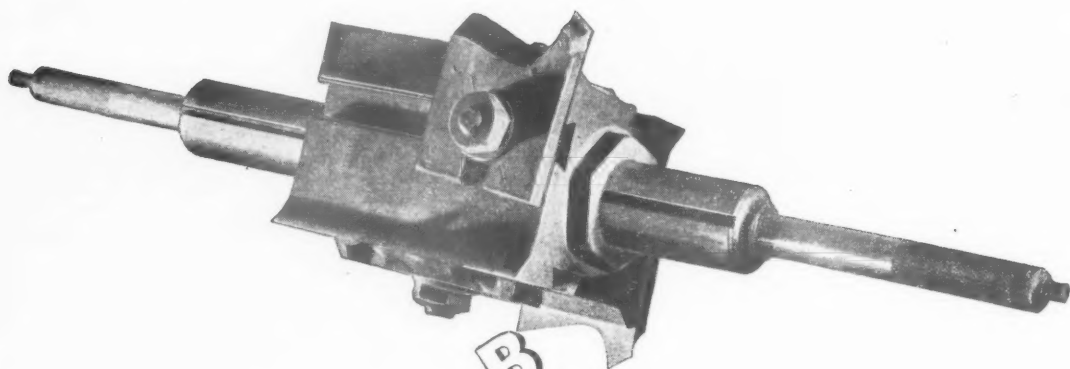
Adjoining: Herbert Carter Secondary Modern School, Hamworthy, Nr. Poole, Dorset.

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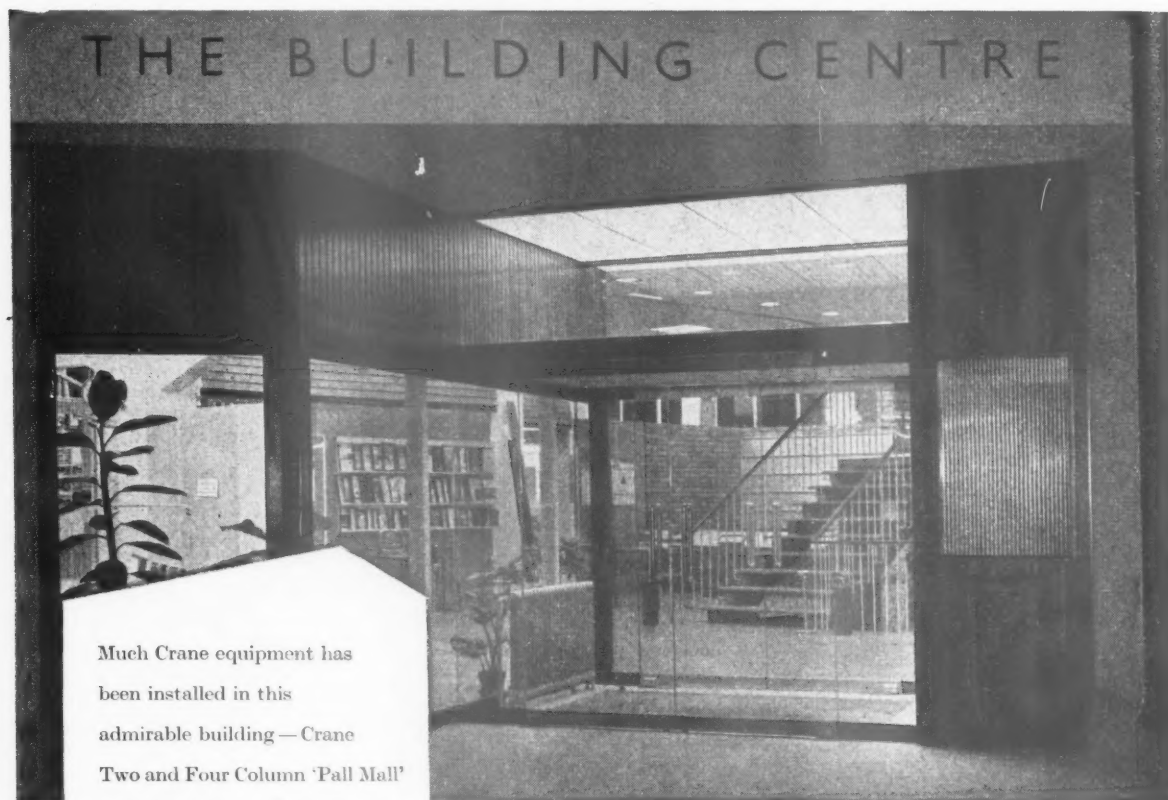
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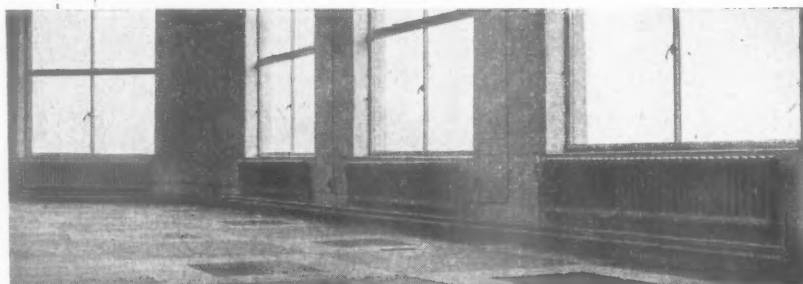
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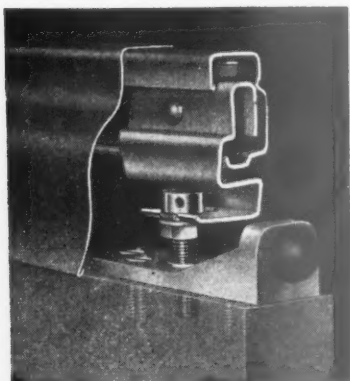
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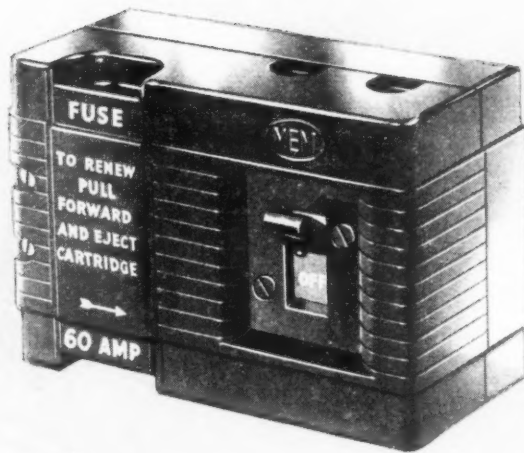
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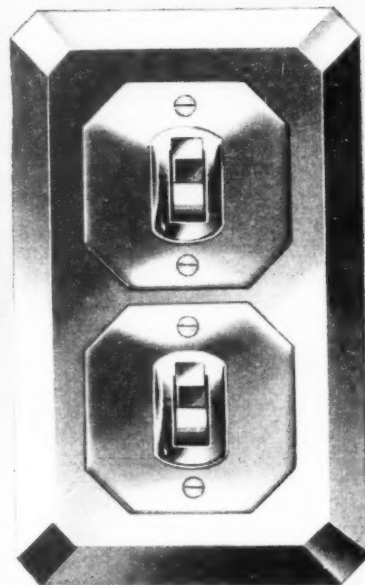


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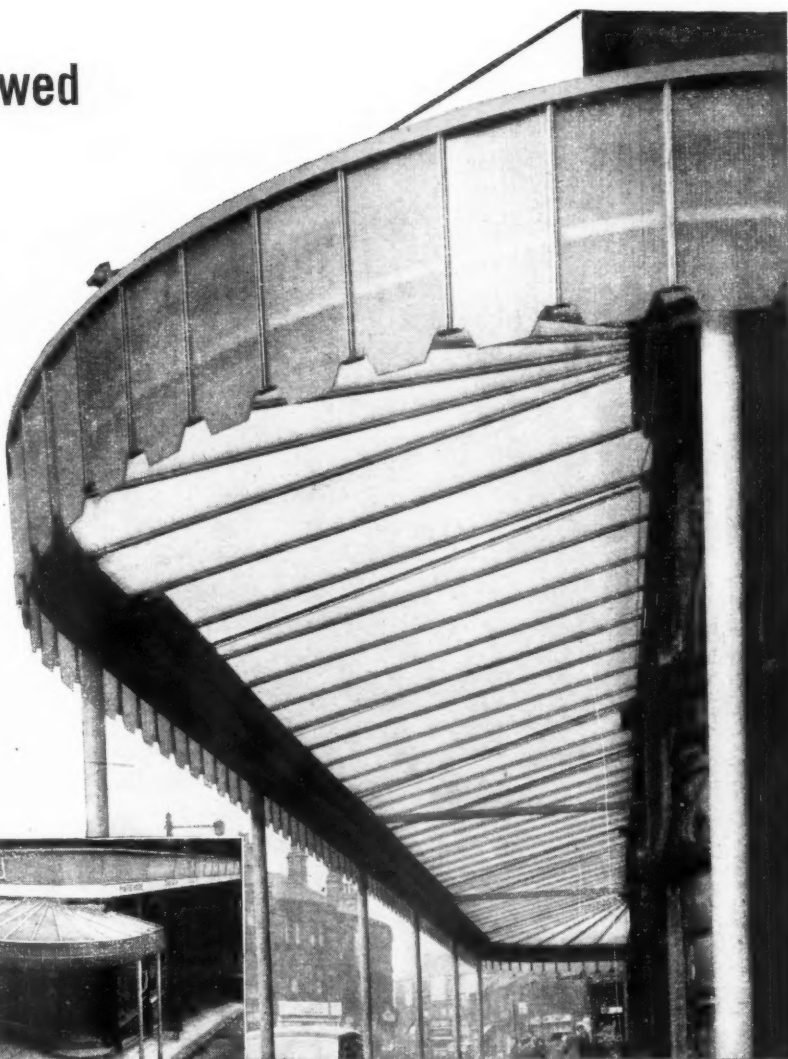
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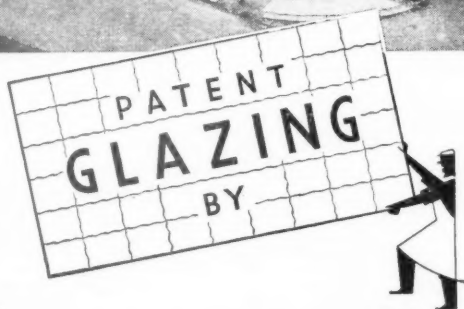
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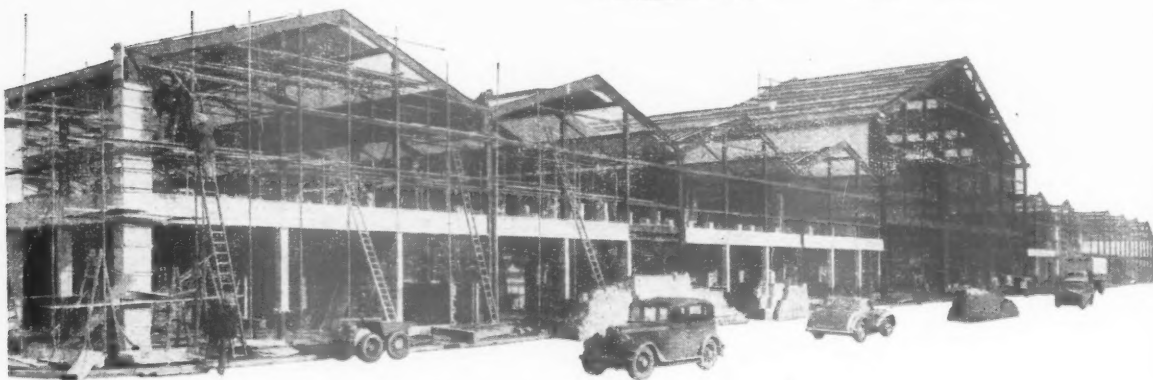
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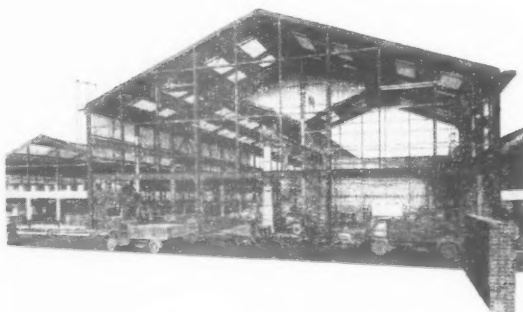


W. S. Atkins & Partners, Consulting Engineers.

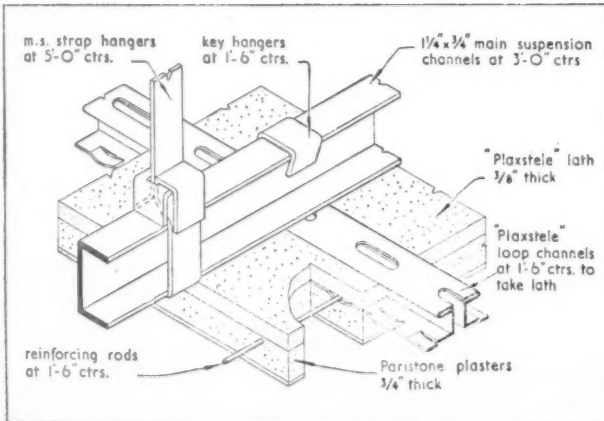
THIS new factory for The A.P.V. Co. Ltd., at Crawley, Sussex, consists of a main Factory Block 475 feet x 360 feet overall and an adjacent Foundry Block 350 feet x 160 feet overall. Both blocks are of welded Portal Frame construction with provision for overhead cranes in all bays. Approximately 1,500 tons of structural steel are involved.

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■ The above illustration is a close-up view of work in progress on the centre section of the Factory Block showing the span of the Portal Frame construction.



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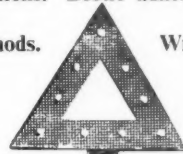
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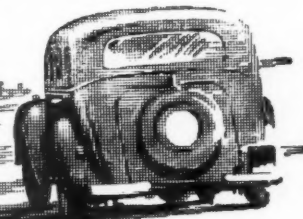
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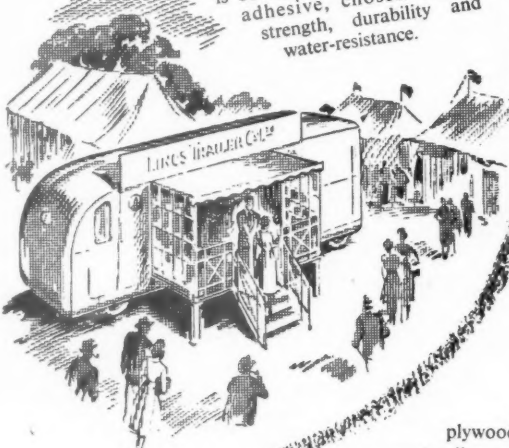
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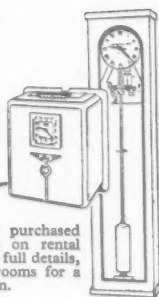
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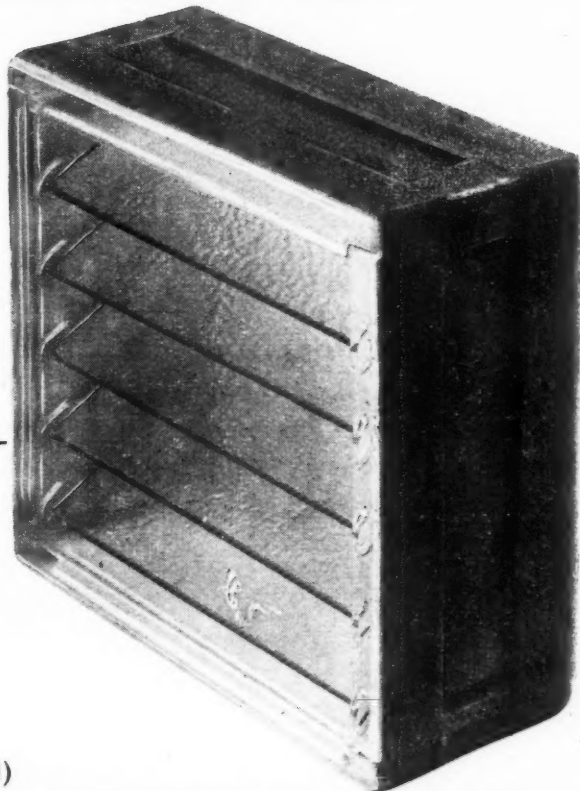
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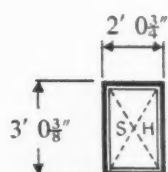
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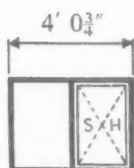
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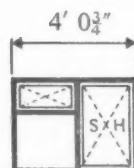
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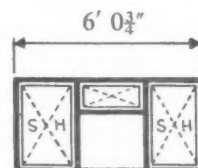
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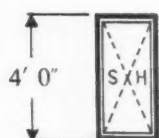
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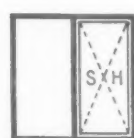
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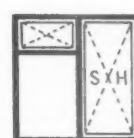
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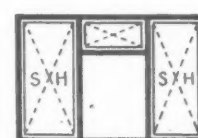
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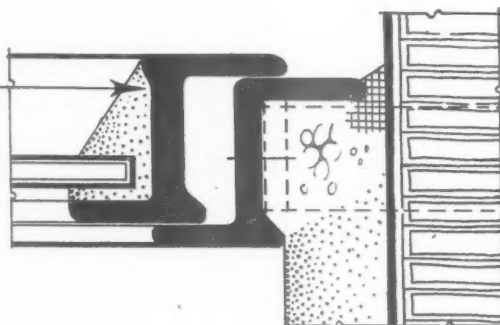
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No. 2975 MARCH 6, 1952 VOL 115

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TRITURATION POINT

The last batch of Festival remnants is being auctioned off this week in the Power and Production Pavilion on the South Bank. Once again it seems clear that a master-hand has compiled the catalogue, for a queerer lot of lots you could hardly have dredged up in a day's march through a Paul Jennings article in the *Observer*. Here are a few of them taken at random—and it was random this time, not the result of an hour's research. Lot 146: Two hand-operated Triturators (what are these vaguely tonsorial-sounding objects?). 844: A pair of coloured glass paperweights (one faulty). 888: Some paper doyleys, cutlet frills, leather slippers and cotton gloves (all the essentials here for some macabre party). 934: Four ticket-bell punches, two vapour sprays, five packets

of Walker's Blockettes, three bottles of liquid veneer and other items. 144B: A model car of the future. 1451: A lady's bicycle, a stack of imitation grass and a quantity of small boards (just make a short de Maupassant story of these ingredients in three seconds from now). 1669: A model coal-cutting machine, a puppet dancing girl (those Italian miners again, I suppose. Can't keep their minds off it), and three other puppets in case (in case of *what?*). 1738: A stack of obscured glass bricks (ashtrays to you). 1764A: A very large tongued and grooved partition. And, best of all, in its sinister imagery, is Lot No. 1831A, which reads: "Nineteen wooden-jointed hands, five rubber legs, a foot (No, no, not that!), four oval cases of butterflies, a quantity of dummies, three sledge hammers, seven lengths of oak (the coffin, maybe?), two hall-mirrors, a quantity of artificial flowers (yes, death is still with us), and a few oddments."

It was this lot and a sneaking curiosity about Triturators which finally sent me off to Langley to look at the stuff.

RALPH'S TUB AGAIN

Largest of all Festival remnants is, of course, the Dome, the future of which was the subject of a Parliamentary question last week. The LCC still want more time to consider its fate and to leave the building where it is while thinking. The Minister says, sorry but he must have an answer, one way or another, at once.

While one sympathizes with, Mr. Eccles' wish not to become "the caretaker"—as he puts it, "of empty and deteriorating structures," it does seem

rather questionable whether this is just the moment to spend time and money on demolishing a building which, as the architect says, has plenty of life in it yet. The operative word is perhaps "empty." If, in fact, there is no real *use* for the building on its present site, it had probably better go—if necessary into store. An un-used building has a curiously blighting effect upon its neighbours, and this, above all things, is what the South Bank can well do without.

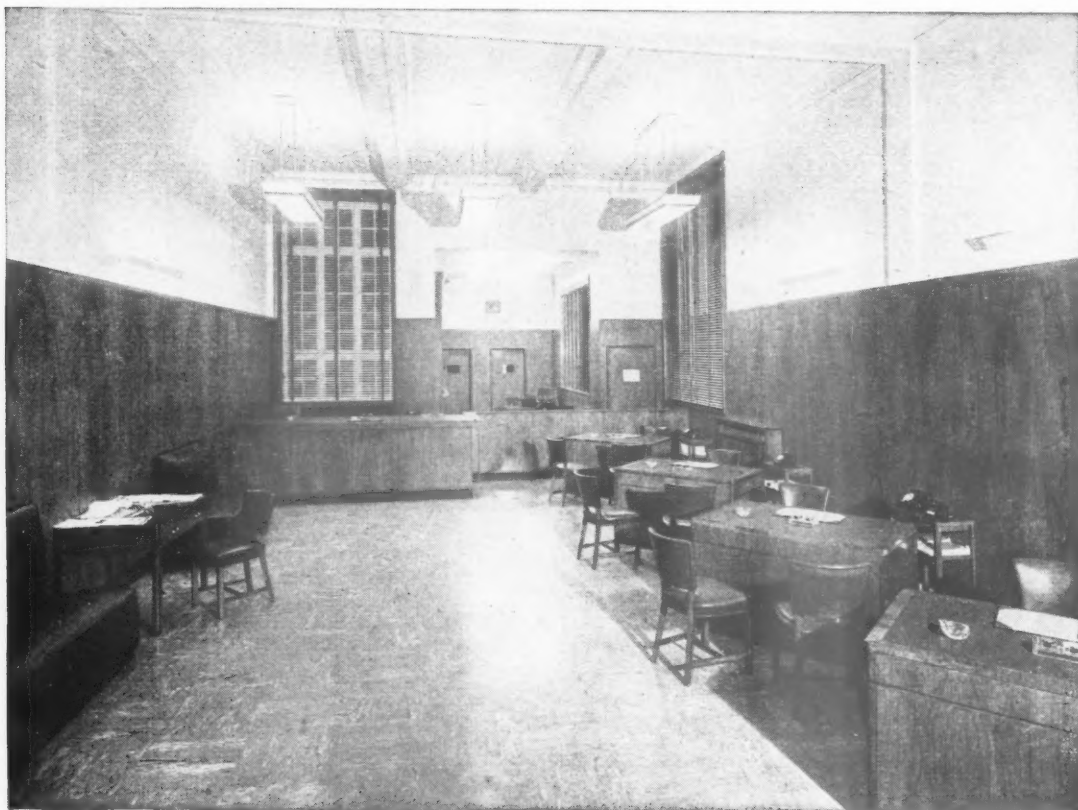
GEORGIAN BRISTOL

There has been such a spate in the last few years of popularizations of architectural history that a serious book is especially welcome when it comes along. The trouble about the sort of popular books I refer to is that by skating over a subject, gathering together a few stock illustrations and padding it out with easily available information, their authors are able to put together a book which captures the market and obstructs the publication chances of the scholarly book containing original thought or research.

The ideal, of course, is popular readability combined with serious scholarship. We get that all too rarely: in books by John Summerson and a few others. And we got it in Walter Ison's book on Bath, which had a great success when it came out a few years ago. Now he has produced another, on Georgian Bristol,* which seems to me (who am not an expert on Bristol) to be a model of its kind. No doubt the pedants will argue about points of detail. That is their job. But for the man who wants to know and appreciate, it is thorough, well arranged and beautifully illustrated. The latter

* *The Georgian Buildings of Bristol*. By Walter Ison. Faber and Faber Price, 50s.

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means that it is expensive, but that is a thing we must get used to. Incidentally, the perfunctory popularizations referred to above are becoming expensive too, so they are losing the one attribute that justified their existence—availability to everyone.

POWELLS APART

There is a house in South Kensington which would appear to be a forcing frame for the rapid growth of brilliant architects. One might be even more specific and say that one small room in the house acts in this fashion, for from it in recent years have come two notable competition-winning designs. The first was the famous Pimlico housing scheme by Phillip Powell and Hidalgo Moya. Last week another set of drawings prepared in the same room were shown to the Press: the winning design for the Golden Lane housing competition, which has been held by the Corporation of the City of London. The author of the winning scheme is also, oddly enough, named Powell, but is no relation to the other. Geoffrey Powell, like Phillip Powell and Hidalgo Moya, was also an AA student and contemporary with them. He is, in many respects, a typical product of an architectural school which, as Frederick Gibberd said when principal, produces mediocre architectural assistants but absolutely first-rate architects. He is, in addition, a talented painter and was an expert on the 1851 Exhibition very many years ago, well before its recent return to favour as a subject for study.

At first glance his winning design doesn't seem particularly striking—the elevations appear tentatively executed—but the layout of the blocks and the human, intimate treatment of the densely populated site is excellent. His most adventurous idea is in the planning of an eleven-storey block of two-room flats. These flats are grouped in pairs, eight to a storey, round an open access gallery with central stairs, and lifts. The success of this conception will a great deal depend on the detail treatment of this block to ensure that London soot and weather don't turn it, in time, into a gaunt, drear, windy tenement. The architect is, of course, well aware of this little problem, amongst others, and he has that sensitivity towards details



Geoffrey Powell, winner of the Golden Lane housing competition, whose design is published on pages 298-302 and commented on by ASTRAGAL in the adjoining column. Aged 31, Geoffrey Powell went to Wellington College and the AA (1939-43). On leaving he worked for eighteen months in Frederick Gibberd's office and for two years with Brian O'Rourke. Since 1948 he has been teaching part-time at the Kingston School of Art and running a small private practice.

of design which will ensure the creation of a housing scheme of which the city will be justly proud.

*

Of the other three prize-winning designs, the most remarkable is the fourth, by David Gregory-Jones. He is another AA student. He left only two years ago, since when he has been working for the LCC. Looked at superficially, the design seems an extraordinary return to mere eclecticism on the part of a modern young architect. Certainly some jeering comments were passed upon it by visitors when it was first exhibited, due, no doubt, to a superficial study of it.

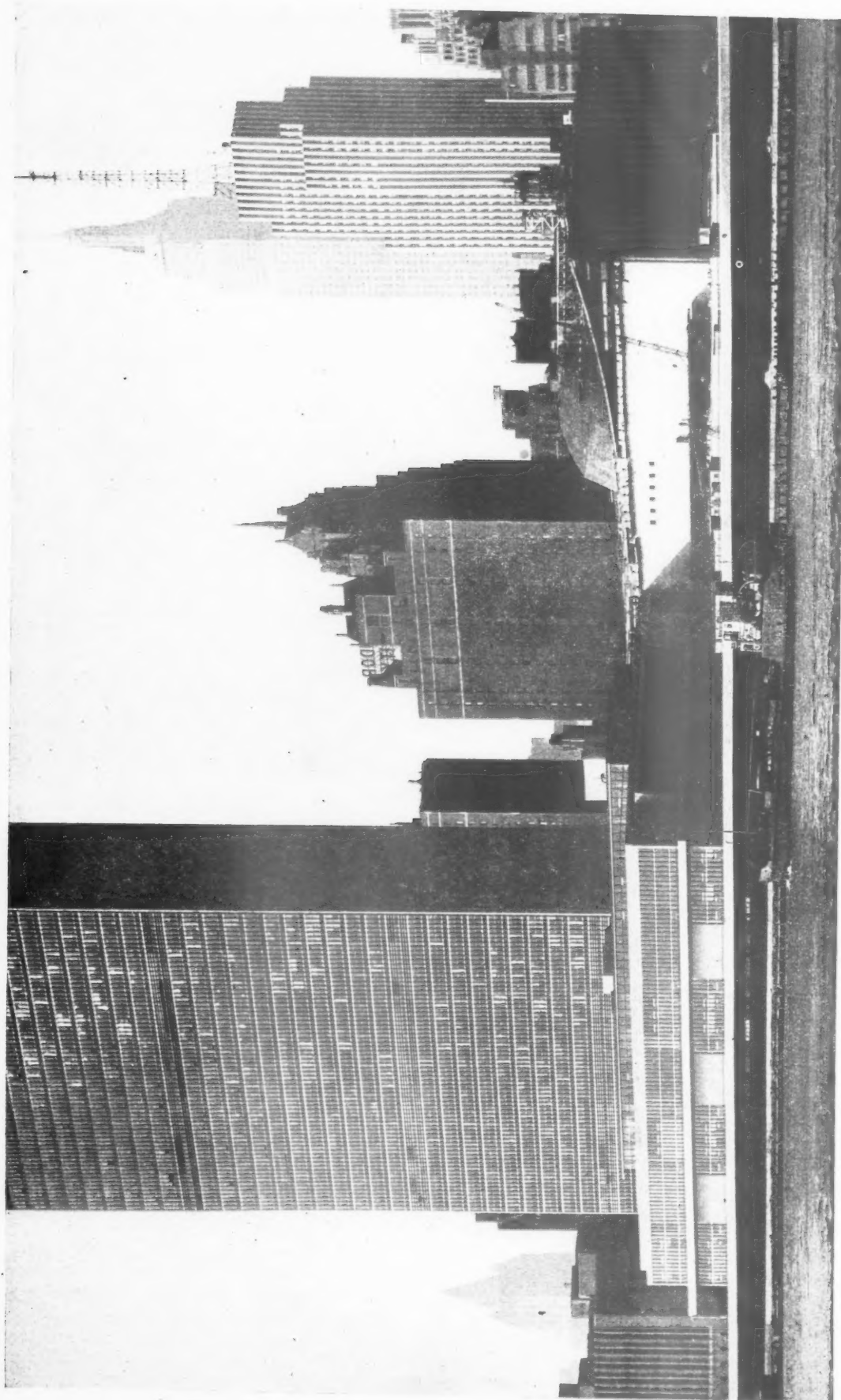
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It would be more charitable to assume that the scheme is a sincere attempt on the part of the architect to design a building with which the occupants would be in sympathy. Competently planned, if rather extravagant in lifts, it tries to achieve, by turning inwards on the site,

a quiet, precinctual and (dare one suggest?) romantic character. These qualities have been rightly awarded by a thorough and competent assessor.

STUDENT EDUCATION

Last week, at the annual safety-valve meeting organized by students of the AA (subject: "Quo Vadis AA?"), clever and witty speeches engendered quite considerable enthusiasm in the largely-student audience which even the tolerantly amused little sallies on the part of the older member could not entirely dampen. This enthusiasm for discussing the future, and in particular the future of architectural education, would have appeared more sincere if some of the students had bothered to attend an interesting discussion held by the ABT the previous evening, entitled: "Architects' Training and Efficiency in the Building Industry." With F. R. Yerbury in the chair (he was in the chair at the ABT's inaugural meeting, by the way), Howard



Prospect : United Nations' Headquarters

The tall block on the left, even in its truncated condition, will be easily recognized as the Secretariat Building of the UN Headquarters in New York. Not so frequently published, however, are views which show the conference area (centre) and the assembly hall (right). The latter is now nearing completion. The Secretariat Building is to be

described in the Prospect series of talks on the BBC's Third Programme on March 30 at 8.45. The speaker will be Ian McCallum, of the *Architectural Review*. The four skyscrapers shown here, ranging from Edinburgh Castle Gothic to would-be functionalism, epitomize neatly attempts to romanticize vertical building.

POINTS FROM THIS ISSUE

| | |
|--|-------------------|
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| Is the MOHLG ignoring the profession? |page 295 |
| Problems of education and qualification |page 296 |
| Steel for schools: new procedure |page 297 |

The Editors

ECONOMY AT THE ARCHITECT'S EXPENSE ?

IN a leading article *The Architect and Building News* of February 28 draws the profession's attention to a most significant omission in a circular issued to local authorities by the Minister of Housing and Local Government. The circular contains five suggestions to help speed the building of houses under licence now that the local authorities have wider discretion (see report on page 268 of last week's issue of the JOURNAL). One suggestion is that block licences be issued to builders who for speed and economy wish to build a number of houses as a single job.

However, as *The Architect and Building News* points out: "The Minister's communications have, so far, not included any recommendations to local authorities or those wishing to build under licence *for the employment of competent technical advice—architects or planners*—(our italics) though he has, in the past emphasized the importance of so doing for all subsidized schemes." Well may the editorial ask: "Is this one of the ways that houses built under licences are to be reduced in cost? If so, what becomes of standards in house design or the proper planning of sites and housing areas?"

Strength is added to the implication that the Government is prepared to short circuit the architect in their drive for more and cheaper housing, by a study of the membership of the first of the Regional Housing Production Boards to have been set up. The Board's terms of reference are: "To bring all those concerned in house building . . . into closer consultation, etc." But the Board's membership consists of building employers and operatives, and local representatives of the MOHLG, the MOLNS and the MOW, under the chairmanship of the director of a tobacco company. There are no architects, surveyors, town planners or engineers on the Board.

We have certainly got to increase house production, but not, surely, by reverting to pre-war standards of design and layout. The architect's services are not a luxury but are essential to a civilized way of life. The profession will wait with some anxiety for confirmation from the Minister of Housing and Local Government that he appreciates the value of their service to the community and all will commend the action of

Robertson addressed an audience of thirty-odd in reply to points put forward by student Christopher Whittaker—an AA student, and the only one present.

THE TOWN DEVELOPMENT BILL

The Town Development Bill (second reading last week) is designed "to encourage town development in country districts for the relief of congestion or over-population elsewhere" and involves the repeal of subsection 5 of section 19 of the Town and Country Planning Act, if that means anything to you. Briefly the Bill makes proposals for "receiving districts" which will receive Exchequer grants if they relieve congestion in London, a county borough or a district in another county. Local authorities are to be given further powers to acquire not only land not designated as subject to compulsory acquisition, but also land in an area where no development plan has become operative. The Bill is, of course, to be debated and may turn into something quite different. It seems quite a logical extension of the Town and Country Planning Act, but then I don't own any land to be compulsorily acquired.

AN APOLOGY

I have been taken to task by Robert Matthew, one of the JOURNAL'S guest editors, over the remarks I made last week about his own department. ASTRAGAL is sorry if the impression has been given that he obtained information as a result of a visit to County Hall. This in fact was not the case. He must also apologise for some errors of fact in trying to interpret stories that were circulating around the profession. The story about the County Hall extension, it now appears, is quite untrue, and the Royal Fine Art Commission has not disapproved any National Theatre design by O'Rourke. It merely expressed its dislike of the proposed siting of the building on the same frontage as the Royal Festival Hall when its opinion was asked informally. What changes are likely to result nobody yet knows, and discussion of any particular alternative site is premature. As regards elevations of new buildings, I understand that the number of cases where these are discussed with architects is relatively few and these usually where questions of relationship with adjoining development are involved.

ASTRAGAL

The Architect and Building News in pointing out the first indications of a possible trend in the Ministerial policy which could have pernicious results to us all.

RESEARCH INTO EDUCATION

Two talks, followed by discussions, which were attended by architectural students last week showed that students (in London, at any rate) are becoming anxious and worried about their training and their future prospects. They have good reason to be so. The post-war building boom on which both architects and students have staked so much has never amounted to a great deal and is now fast coming to a close. Students on qualifying are at last finding it difficult to get a job. The reason for worrying about their training, however, is not quite so obvious for those who remember early struggles to form schools, have lectures, for qualification by exams, for "live" programmes and for freedom to design in one's own *metier*. The student of a recognized school has, on paper, got everything. He has, in fact, got too much, including the title of "architect" at the end of a five years' course with one year's practical experience. The average five-year school course is over-crowded and unbalanced.

He attempts a superficial study, backed by spare-time reading, of more separate and different subjects than any other profession in the world. He also attempts to apply his knowledge by designing (on paper) as many buildings in five years as he, alone, could design, detail, and supervise the construction of in fifty years. His position, leaving school, is akin to that of Barrie's little sillies who don't know what they are—he is competent neither as an assistant nor as an architect.

Our plea is for the formation of a study group who, now the battle for sound architectural schools is won, will look afresh at the problems of education and qualification. The RIBA is heavily over-worked but the AA—that self-professed *unique* institution—has a precedent in these matters.

Tony Moore, Student RIBA

Theory and Practice in Education

SIR.—ASTRAGAL'S recent comments on the RIBA ruling regarding practical experience prior to graduation express the feelings of many students. If anything he underestimates our disappointment, which in many cases, amounts to real bitterness. Worst of all there are no effective measures we can take, we have no say in things which affect us, and no one seems to consider our ideas on such matters.

However, this incident reflects a much larger issue, which does not seem to have been stated. The Institute, as shown by their action, realise it, but have applied an expedient, not a solution. The issue is whether a school training produces architects.

We find ourselves, now, in the final year of a lengthy training. In the past we have been able to observe and criticize without inhibitions of actual building work. This has been sometimes exciting, sometimes exasperating, sometimes dull, but none the less valuable. It appears that some period such as this is useful, a time to take a long view, to dream and think and talk of what might

be rather than what is. In fact to establish one's philosophy, a basis for life. But at the same time, beside this fullness of thought, there grows another feeling, that of the emptiness of our experience. All very well, in former days, to say that action is in the future, but here we are, nearly at that future, and our emptiness of experience has assumed considerable importance. Take stock: after nearly five years of training, am I anything near to being an architect? Quite plainly and honestly the answer is "No." One could never expect, after five years, even under the best conditions, to know much. But at least one should have a sound basis on which to continue, a rounded-out basis of thought and practice. The RIBA has seen that something is lacking, but has only tried to fit a patch, when it should encourage a new and whole growth.

Over the years of study my ideas have undergone many changes. I expect—and hope—they may continue to change, and so I realise that what I may say now is in no sense final or complete. The basis of the education of architects at present is a long school course, but clearly this neither satisfies the authorities nor the student. Yet it undoubtedly has its value. On the other hand one learns best by doing—in action—with help and guidance from those more experienced. These two poles of thought and action must be made complementary—at present they are mutually exclusive. One suggestion has been to bring into the school elements of practice—"real" clients and problems, workshops and practical training sites—but this alters the character of the practice, and conditions it to the school, removing its basis of action within a complete framework. The opposite idea is to bring the school to the apprentice—articled pupil—in the form of night courses. This, I think, probably has the reverse effect—theory entirely conditioned by the "now" of practice. Somehow neither gives satisfaction, and I feel that some other way may be more useful to development.

There are two possibilities. The student might attend a school for some time, perhaps two or three years, then work in a number of practical ways—on the site, in factories, in offices—finally returning to the school for a further two years. Apart from the length of time taken, this idea has drawbacks in the relation of thought and action.

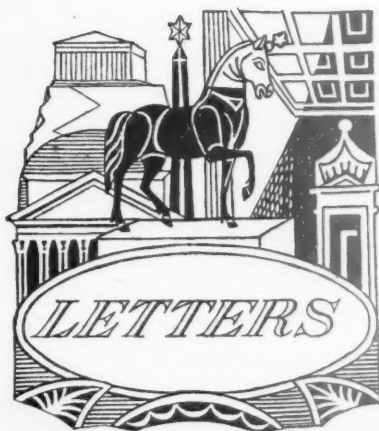
Another way, which I feel relates theory and practice more closely, would be to begin in action; office, building firm, or some other way; and when a problem is encountered which cannot be solved in the normal routine of practice, then to spend some time in a school examining and solving the problem. This could apply to technical, social, philosophical: all aspects of architecture. Nor need there be any fixed age limit—one is always learning, one should always be ready to widen experience and thought.

Under the present conditions in the practice of architecture all these ideas seem rather remote. People are unable to spend so long "qualifying"; schools have little flexibility of curriculum. I suggest that the time has come for some changes. First, that the use of the word "architect" be open to all engaged in building: I am confident that quality of building is a more effective argument than professional status. That the architect be no longer an isolated specialist, but a co-ordinator in the midst of a team engaged in building, who has working with him from the start the engineer and the builder. That the school is no longer regarded as a thing apart, a private organization, but as a laboratory for those who are building, supported by them—or by the community if you like.

Architects have long recognized that a school training by itself is insufficient basis for practice: in his turn the architect's position is not above criticism. Architect, teacher, and student should see the necessity for changes and try to achieve a more satisfactory condition.

London

TONY MOORE





MOHLG

"Make Full Use of Existing Houses" says Minister

The Minister of Housing and Local Government, Harold Macmillan, has sent a circular to housing authorities pointing to the need for making the fullest use of houses already built, as well as building the maximum number of new houses. This can be done, he suggests, in two ways: (1) By encouraging exchanges of tenancies which will bring houses into fuller use; (2) by considering sympathetically applications by tenants of council houses to take in lodgers.

The greater variety in the types of house now being built will, the Minister points out, facilitate lettings which meet the needs of families of various sizes, and so avoid waste of accommodation. But in many cases the needs of both large and small families could be met by arranging exchanges of houses not only between the local authority's own tenants, but also under arrangements made with private landlords.

It is pointed out in the circular that "It will often happen that tenants with some spare accommodation wish to stay where they are, but are ready to take in a lodger, and that people in need of lodgings cannot find them. Arrangements designed to bring the two parties together would be of advantage to both, and would be of special value to industry as well as to housing in districts into which labour is being imported for work of national importance."

SCOTLAND

First Large Scale Building Exhibition

The first large-scale exhibition on Building and Civil Engineering in Scotland will open at the Kelvin Hall, Glasgow on March 26. Government departments with special interests in building and civil engineering in Scotland are to provide stands. They include the Ministry of Works, the Department of Health, and Department of Education.

The MOW exhibits will include "Careers in Building," "Building Research and Housing" and a stand showing something of the work of the Ministry's Technical Information Service. For one exhibit, "Training and Practice," the colleges and schools concerned with technical training in Scotland have combined with the MOW, the Department of Education, professional associates and the Building Trades Apprenticeship Council to present the work of apprentices and skilled craftsmen. Competitions for apprentices will be held each Saturday during the exhibition.

INVESTITURE

Accolade for Hugh Casson

At the Queen's first investiture, held at Buckingham Palace last week, Hugh Casson, who was Director of Architecture for the Festival of Britain, and H. Leslie Joseph, managing director of the Battersea Festival Gardens, were among those who received the accolade.

MOE

Steel Authorizations for Schools: New Procedure

The Minister of Education, Florence Horsburgh, announced last week in Circular 245 that she has decided to modify the procedure whereby iron and steel authorizations are issued for individual building projects. The bulk allocation scheme described below will come into operation from Period III, 1952. At the beginning of the new scheme, each authority will be given a bulk allocation of steel for Period III, 1952, a first instalment of their allocations for Periods IV, 1952, I, 1953, and II, 1953, and an indication of their probable total allocations for these three later periods.

The scheme will apply to major projects for primary and secondary schools (including voluntary schools), all minor capital works carried out by the authority (including school meals projects costing less than £1,000) and repair and maintenance jobs. It will not apply to major projects for further education establishments, training colleges for teachers, special schools and school clinics, school meals projects costing over £1,000, and minor capital projects carried out by voluntary bodies. These will continue to receive individual steel allocations.

The bulk allocations will be based upon estimates of steel requirements which authorities will be asked to provide. The first estimate covering all steel required for delivery in the first four Periods (III, 1952, to II, 1953) should reach the Ministry on form S.B.24 not later than March 21, 1952. In compiling the estimate, the authority should assume that the available steel will not permit more than an average of 1 ton of steel for each £950 of gross cost.

In order to help the Minister to assess the quantity of steel which should be held back from the bulk allocation scheme, the authority is asked in parts I and II of form S.B.24 to record the steel requirements of major projects other than for primary and secondary schools.

As work of the kind covered by Part III of the form (minor works) can usually be designed to use very little or no steel, the Minister suggests that authorities should base their estimates on their deliveries for 1951/52.

It is hoped to complete the examination of the estimates and to announce bulk allocations in April. A single authorization will be sent to the authority for the total quantity of steel allocated to them. It will then be for the authority to issue sub-authorizations to their contractors and sub-contractors and, through the architect to the promoters, to the contractors responsible for building projects at voluntary schools.

Many authorities have returned iron and steel authorizations for cancellation and re-issue. This will no longer be possible once the bulk allocation scheme is in operation. It will be open to the authority to surrender a part of its bulk allocation within two weeks of the announcement of firm total allocations for each period, and to ask the Ministry to add the surrendered quantity of steel to a latter allocation. If, however, the authority subsequently fails to use its full allocation, the unexpended portion cannot be returned to the Ministry but will have to be made good from later allocations; these will not be increased.

ICE

Discussion on Economical Methods of Construction

Speaking at a discussion held last Thursday at the ICE, Frederick Snow claimed that "such structures as the Dome of Discovery could have been more economically constructed in reinforced concrete had not other considerations prevailed. Even so," he continued, "the Dome was largely supported on reinforced concrete piers, etc."

The purpose of the discussion was to compare the economies of prestressed concrete with those of other forms of construction. John Cuerel claimed that "taking merely drawing office factors into account, prestressed concrete is the most economic material for a wide range of structures." He suggested that its use was not spreading more rapidly because of the present shortages of materials and up-to-date plant, and of the difficulty of obtaining high-grade concrete.

Comparing reinforced concrete with structural steel, Frederick Snow claimed that the advantage of first cost and maintenance was heavily in favour of reinforced concrete. "Where the work is carried out by a competent contractor," he asserted, "the time required was no greater than that for steel. At present," he continued, "the cost of prestressed concrete exceeds that of normal reinforced concrete; nevertheless, where precast units are concerned, prestressed concrete, if used judiciously with a reinforced concrete frame, will gain favour by its saving in steel and cement."

In support of aluminium, Douglas Pike said that "the relative fall in price of aluminium alloys and the growing appreciation of their technical properties has widened their field of application." He could not claim, however, that this field included structures other than those in which the special properties of aluminium were advantageous.

Speaking of the advantages of structural steelwork, Hubert Smith pointed out that the strength of steel structures was less dependent on site supervision than that of concrete structures. He stressed the speed of erection of steelwork, and mentioned the latest methods of cleaning and protecting steel by grit-blasting and metal-spraying, by which it was possible to reduce the re-painting cycle to 7 or 10 years. "Tubes," he continued, "are the most efficient section or strut known and the advent of welding is leading, particularly on the Continent, to a great expansion of tubular construction."

* See this week's survey in the Technical Section in which composite construction is described in detail.

DIARY

Modern Swedish Architecture. At the Building Centre, Store Street, Tottenham Court Road. (Sponsors: Swedish Society of Architects and the Swedish Institute.) 9.30 a.m. to 5 p.m. Saturdays: 9.30 a.m. to 1 p.m. **MARCH 1 TO 29**

American Commercial Buildings. Fello Atkinson. B.B.C. Third Programme. 8.5 p.m. **MARCH 7**

Colour Relationships. J. Lawrance. At the Building Centre, Store Street, W.C.1 (Sponsor: IIBD.) 6.30 p.m. **MARCH 11**

Some Scientific Aspects of the Design of The Royal Festival Hall. J. L. Martin. At 66, Portland Place, W.1. (Sponsor: RIBA.) 6 p.m. **MARCH 18**

London: The Next Twenty Years. Exhibition explaining the 1951 County of London Plan. At County Hall, Westminster. (Sponsor: LCC.) 10 a.m. to 8 p.m. (except Sundays). Saturdays: 10 a.m. to 6 p.m.

UNTIL MARCH 28

GOLDEN LANE HOUSING COMPETITION

FIRST PRIZE-WINNING DESIGN BY GEOFFREY POWELL

The first prize of 1,000 guineas for a design submitted in a competition for a housing scheme at Golden Lane, London, sponsored by the Corporation of London, has been won by Geoffrey Powell A.R.I.B.A., A.A. Dip., of London. The second prize-winners chosen by the assessor (Donald H. McMorran, A.A. Dip., of London), and A. F. Scott and Sons, of Norwich. They have won 700 guineas. The winners of the third prize of 500 guineas are Walter W. Fisk, F.R.I.B.A., A.A. Dip., and Sidney H. Fisk, L.R.I.B.A., of London. A fourth prize of 300 guineas has been given to D. M. Gregory-Jones, A.R.I.B.A., of London. Special mention has been made of the design of Peasfield Mayo and Bodger, of London, because of the interesting use of three-storey terrace houses as an element in the design. The scheme, which is expected to cost about £1 m., had to provide accommodation for about 940 people. The various types of dwellings were to be provided in about the same proportions as those shown in the first prize-winner's report below. Donald McMorran, the assessor, gave a brief report on the winning design in the Guildhall last Wednesday. He was introduced by Mr. Harrowing, chairman of the Housing Committee. There were, he said, three methods of tackling the design problem. Some went in for high blocks, some emphasized low buildings, and a great many went for a variety of both high and low blocks. The assessor had an open mind on this point and he said that he was quite open to conviction on the matter. His conclusion was that many who had sought variety only succeeded in getting unidirection. The winner however, succeeded in getting orderliness. The winning design could best be described as a kind of urban village. The architect had achieved a village character in a featureless site with no particularly pleasing views on its outskirts, and the

FIRST PRIZE-WINNER'S REPORT

| | Type | No. on site | Per cent. of total | No. of persons housed at 1.1 per habitable room |
|--------------------|--------------|-------------|--------------------|---|
| 1 room flats | F.1 | 16 | 5.1 | 17.6 |
| 2 room flats | F.2a F.2b | 88 39 | 40.3 | 279.4 |
| 3 room flats | F.3a F.3b | 84 12 | 40 | 415.8 |
| 3 room maisonettes | M.3 | 30 | | |
| 4 " " | M.4 | 46 | 14.6 | 202.4 |
| Total | — | 312 | Total | 910 |

GENERAL

The area surrounding the site offers no interesting outlook. An attempt has therefore been made to provide interest within the site and the layout is inward looking in character. The blocks are arranged to form courts, none of which are entirely closed, providing interesting outlooks for individual flats and a great variety of views for anyone walking through the site. Placed centrally on the site is block I, of eleven storeys, which can be seen from all the courts. This building, together with the community buildings

and "pedestrian only" square which links them, forms the central focus of the layout.

CONSTRUCTION

From the outset a considerable effort was made to limit the scheme as far as possible to low blocks, the aim being economy and saving of steel. This was extremely difficult without infringing the lighting requirements, and a compromise has been arrived at.

Block I, of eleven storeys, has been designed for a reinforced concrete frame and spans have been kept to economical dimensions. The six-storey maisonette blocks (IX to XIII) have also been designed for a reinforced concrete frame and are capable of being constructed if necessary on a composite system. Party walls are so spaced that they may be load bearing; the blocks can be built with only the framing supporting the galleries on the north faces. The lower flats would be of calculated brickwork. The access in pairs blocks (II to VIII) are of load bearing brickwork with reinforced concrete floor slabs. Thus, with the exception of 88 flats in block I, the complete scheme can be built using only a very small quantity of steel.

FACING MATERIALS

The aim in selecting the finishes has been to achieve permanence, good appearance, and low

site itself would have to be cleared of bombed buildings, but he had succeeded in giving it character. After describing the planning, Mr. McMorran continued: "... this scheme compares most favourably with the others on the small number of lifts to make it work. Another feature is the central piazza which gives the buildings their village-like character. This will be a pedestrian way (except for the necessary access for fire engines, etc.), and will be open to the general public as well as to the local inhabitants. It will lead into the heart of the site and will have a variety of buildings bordering on it. Also on the central piazza is the community building. The architect has seized on the proposal for a village hall and made it the central feature. The design of this building is a very pleasant and skilful piece of modern design. It was very successful on a modest scale. The winner is excavating some of the ground to form sunken courts in the existing basements, part of which will have to be cleared for the foundations of the buildings. These courtyards will form interesting visual effects. They will need parapets and railings and the assessor visualizes people wandering around leaning on the parapets and looking at the courts as do villagers on the village bridge. Courtyards are planted and have large trees informally grouped. The children's playground is connected to the piazza by an open shelter. The scheme will be economical in steel except for the high block. There will be central heating and therefore no open fires. The open space will be maintained by the Corporation. There has been special provision for older people: a proportion of the 16 bed-sitting room dwellings will be allocated to elderly people. These flats, at third floor level, are reached by lifts in adjoining blocks. The striking and unique feature of the scheme is the proposal to excavate the spaces enclosed by the blocks of buildings.

upkeep costs. On the low blocks the brick will be London stock or a brick of similar texture. On block I (XI storeys) brick is used solely as a panel in-filling and in this case a brick of more mechanical texture, such as a Flint Lime, will be used. The reinforced concrete frame which is exposed will be finished by exposing the selected aggregate.

LEVELS

Owing to the provision of basements to all blocks a great deal of excavation is necessary. It was decided to increase the area of excavation and exploit the different levels for visual purposes. Areas surrounded by blocks of dwellings are excavated to form sunken courts which give access to the basements. In these courts decorative shrubs and small trees are provided which can be looked down upon both from the buildings and from the normal ground level. The ramps of the courts have been made sufficiently wide to allow access for wheeled fire escapes.

ROAD LAYOUT AND SURFACE FINISHES

As far as possible service roads have been kept to the perimeter of the site to allow the central square to remain as a "pedestrian only" area. An attempt has been made to get away

from the general practice of bordering the road with parallel strips of grass, paving, etc., which emphasizes its ribbon-like character. The strip effect has been minimized by covering the greater part of the site with permanent, easy upkeep materials such as paving, tar macadam etc. As these will be on a rubble bed they will be able to support traffic such as light delivery vans and refuse removal vehicles. For reasons of economy paving is limited to the central square and the floors of sunken courts, the remaining portions of the site being covered with tar macadam surfaces with chippings, or with soil for the planting of decorative shrubs.

PLANTING

Planting is used to break up the large paved and tarred areas which might otherwise become oppressive. Each sunken court has an area of shrubs or grass which can be viewed from the higher level of the adjacent access ways. These plantings add variety and reduce the glare from paved areas in summer. A certain amount of long term planting is proposed. A number of plane trees are disposed on the site which, however, will not mature for many years. To the north of the site the school area is screened by rows of Ilex which are interspersed with faster growing birches.

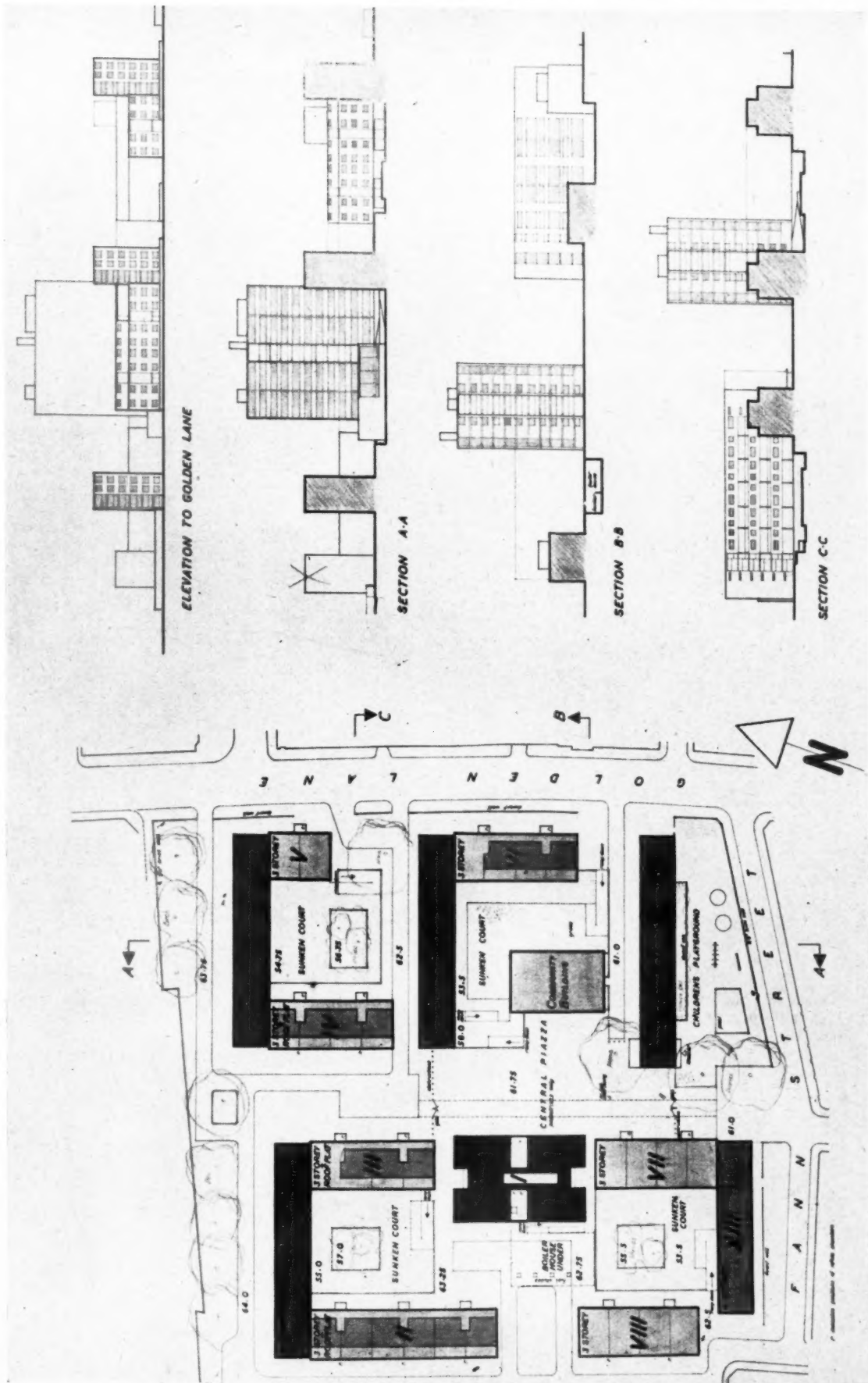
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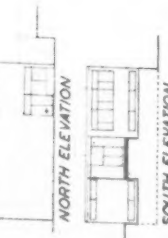
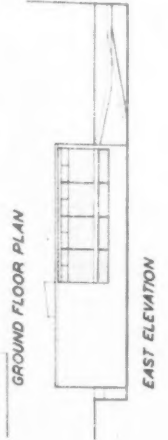
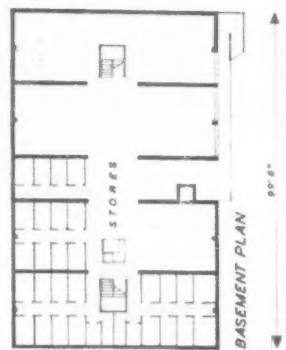
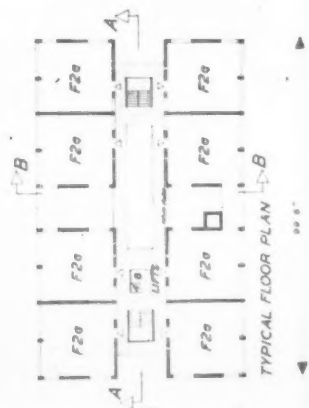
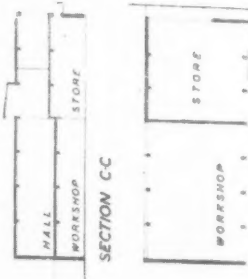
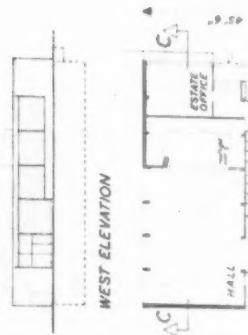
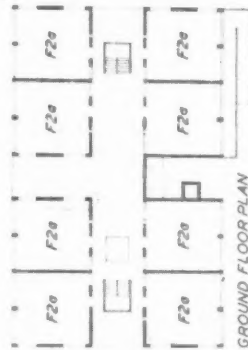
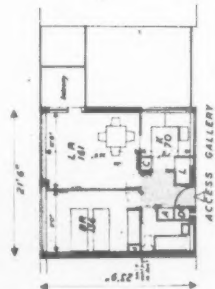
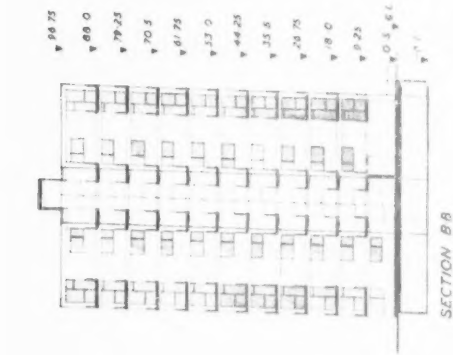
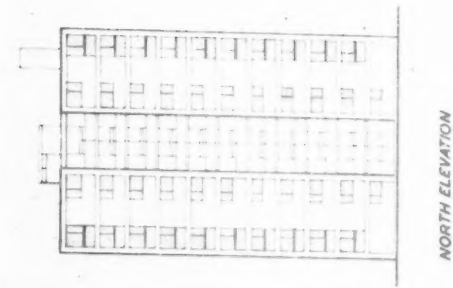
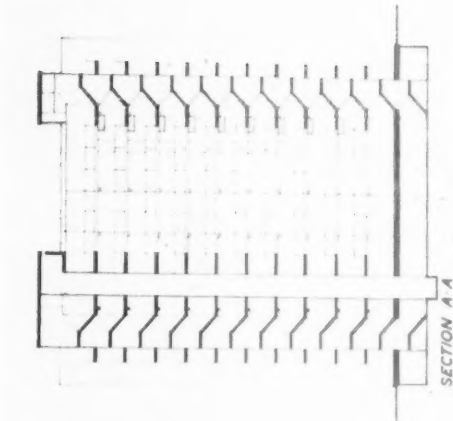
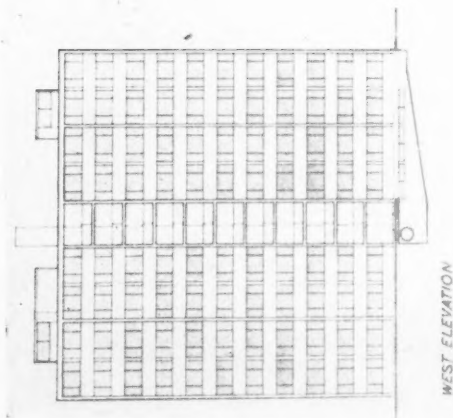
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Site layout and sections through site



FIRST PRIZE-WINNING DESIGN BY GEOFFREY POWELL

Block 1 and community centre



COMMUNITY BUILDING

GOLDEN LANE ECI

BLOCKS II-VIII

SCALE 1 INCH = 16 FEET & 1 INCH = 8 FEET

SHEET 3

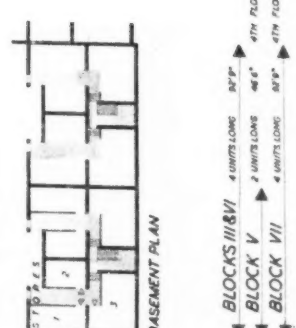
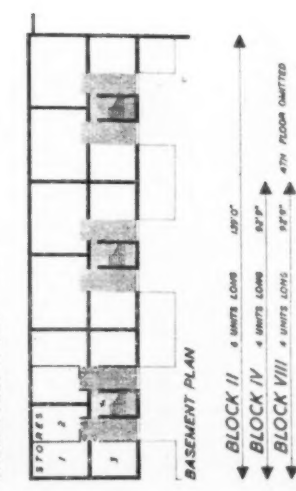
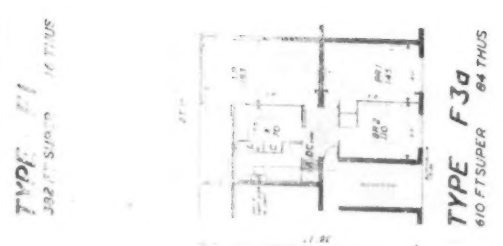
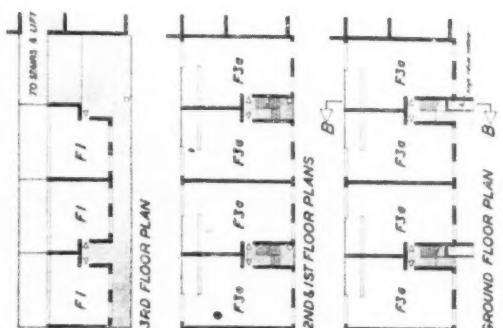
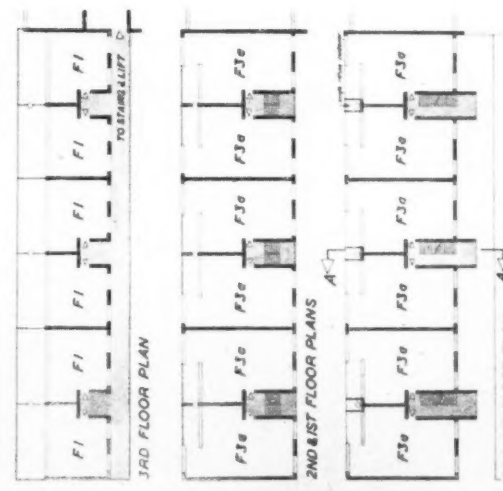
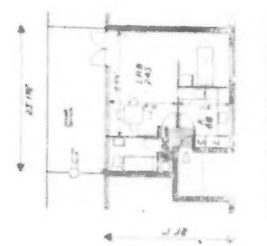
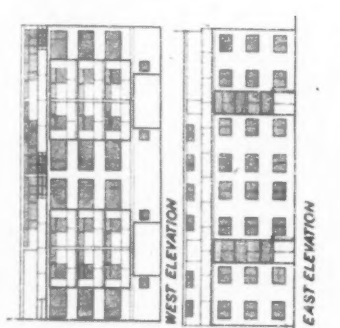
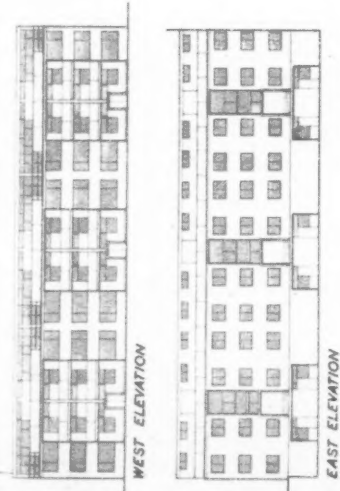
COMMUNITY BUILDING

90° 0'

90° 0'

TYPICAL FLOOR PLAN

BASEMENT PLAN



BLOCKS III & VI 4 UNITS LONG 84' 0" 4TH FLOOR OMITTED

BLOCK V 2 UNITS LONG 42' 0" 4TH FLOOR OMITTED

BLOCK VII 4 UNITS LONG 84' 0" 4TH FLOOR OMITTED

BLOCK II 6 UNITS LONG 126' 0" 4TH FLOOR OMITTED

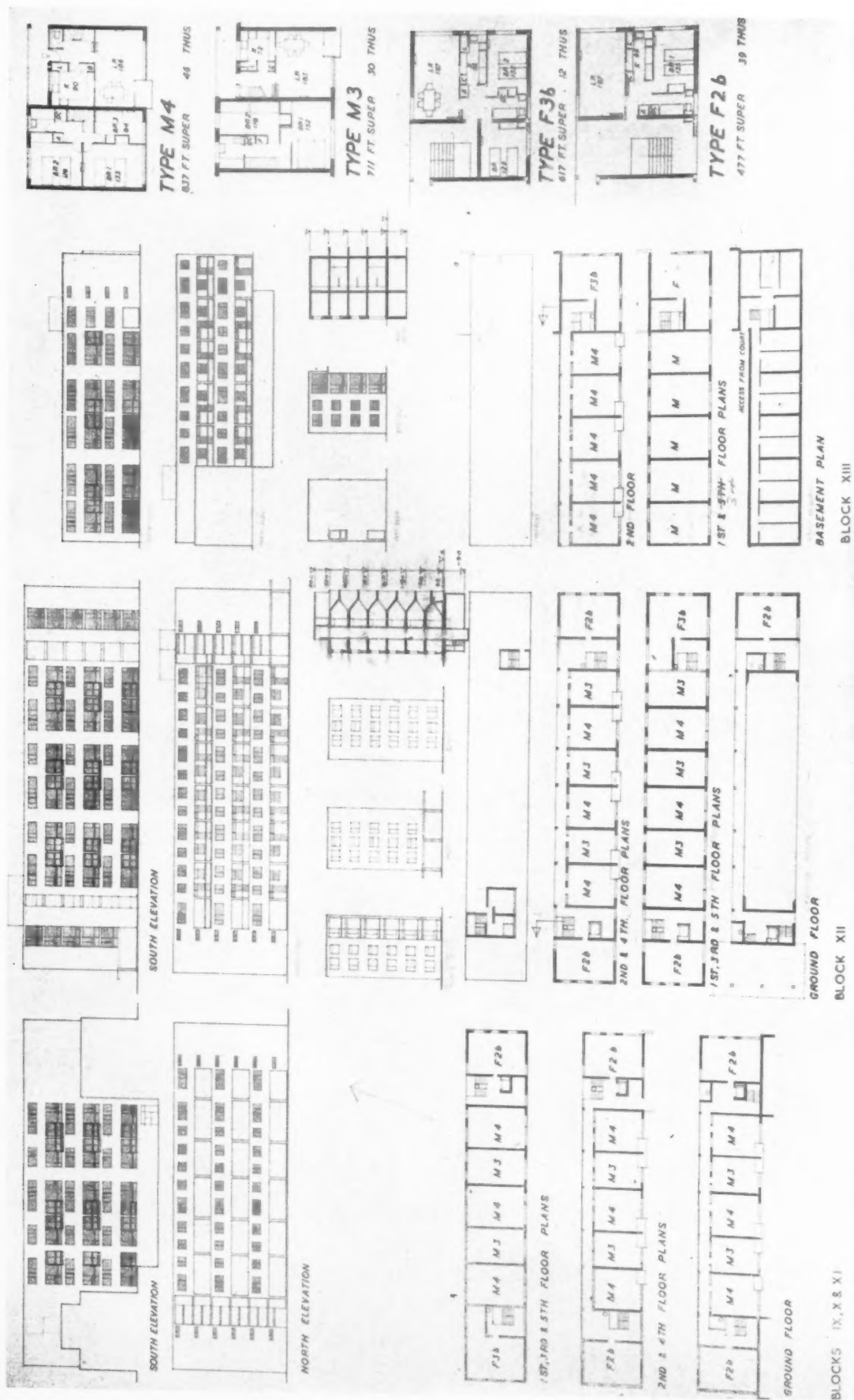
BLOCK IV 4 UNITS LONG 84' 0" 4TH FLOOR OMITTED

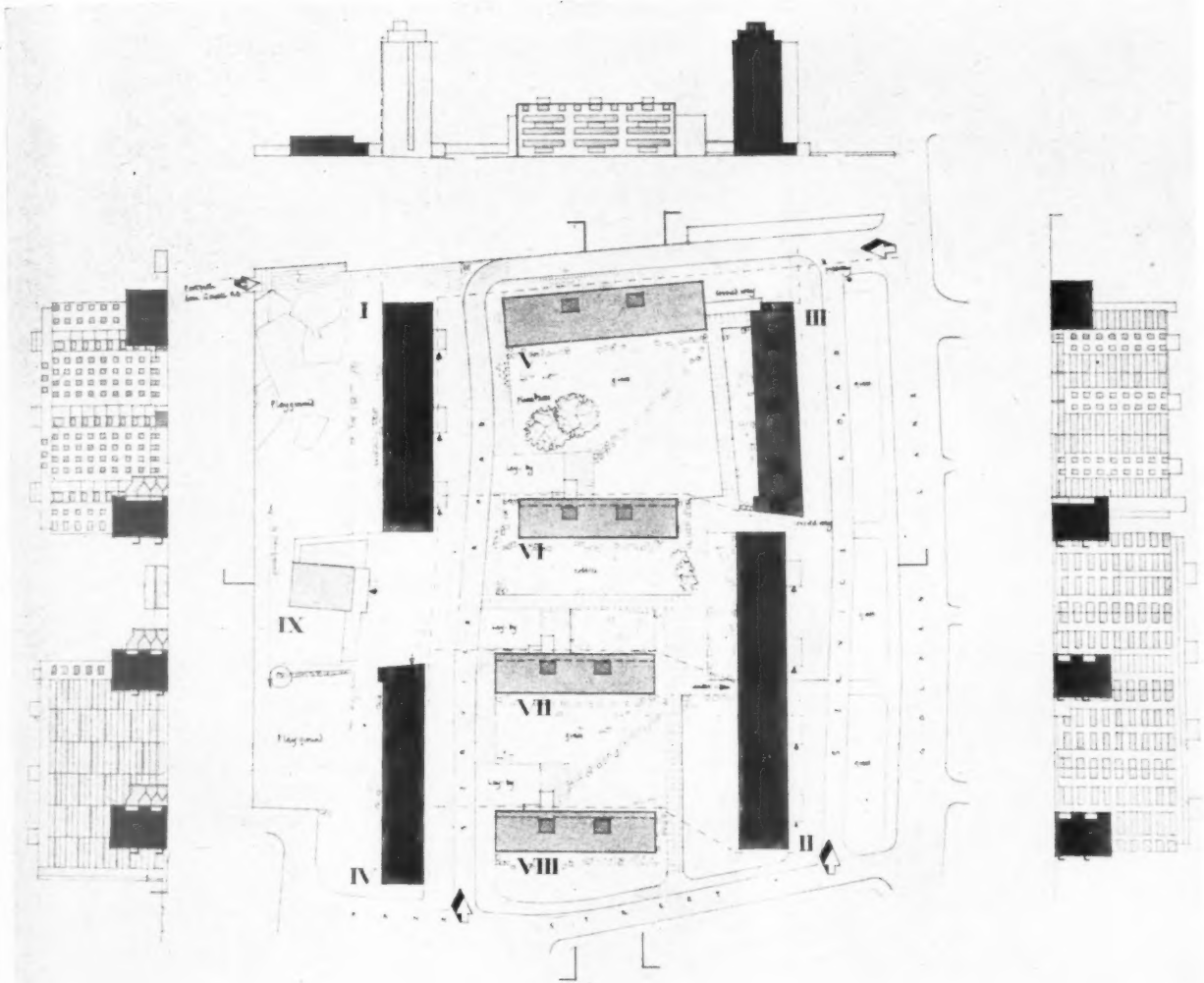
BLOCK VIII 4 UNITS LONG 84' 0" 4TH FLOOR OMITTED



FIRST PRIZE-WINNING DESIGN BY GEOFFREY POWELL

Blocks ix to xiii and detail plans





Site layout and section through site.

GOLDEN LANE HOUSING COMPETITION

SECOND PRIZE-WINNING DESIGN

BY J. M. SCOTT AND A. F. SCOTT AND SONS

COMPETITORS' REPORT

All blocks are one flat deep only, and the four 9- and 10-storey blocks (I, II, III & IV) sited to the east and west have three 4-storey (VI, VII & VIII) and one 3-storey (V) block spaced out between them. This layout, with the appropriate placing of living rooms, will flood them with the maximum of light and air. Generally, staircase access is employed for larger flats while, for reasons of economy, gallery access is used for the smaller flats and the maisonettes, and a load-bearing cross wall construction is used throughout. Convenient access is provided to all dwellings and for fire fighting, etc., by a road from Golden Lane at the north-east corner connecting with two service roads running north and south past the high blocks to Fann Street. The boiler house is at the north-east corner of the site for easy access for fuel and avoidance of nuisance from the prevailing winds. All blocks are to be built in reinforced concrete "box frame" construction with load-bearing cross walls of RC slabs having spans of from 18 ft. to 22 ft. The ground floor slabs to be up to 12 in. thick calculated or "debris load." External walls 8½ in. thick (4½ in. brickwork, 2 in. cavity, 2 in.

wood wool slabs) constructed in panels raised at the toe to a stiffening flange at edge of floor slab, the toe finishing flush with brick face. The load-bearing party walls to have permanent wood wool shuttering both sides as sound insulation. Non-load-bearing internal partitions to be hollow block. Staircases to be of reinforced concrete, cantilevered where necessary from the central newel, for sound insulation. Expansion joints where required to be at staircases. Blocks I, II, III & IV to have good quality golden brown facing bricks for non-load-bearing walls. End walls, staircases, towers etc., concrete. Concrete walls of private balconies to be painted french grey. Blocks V, VI, VII & VIII to be similar but rendered on face of brickwork. Private balcony railings to be wired glass panels in metal frames. Those to access galleries to be wrought iron with hardwood rails. The walls internally plastered throughout except the basements which are fair faced. Floors of dwellings—Accotile or similar on sound insulation; to access galleries—concrete tiles (on sound insulation where over rooms).

SERVICES

Vertical ducts are provided in all blocks for all services including soil and anti-

syphonage, water, gas, hot water, and heating pipes and electric cables. All light including to roads to be electric with availability in all dwellings for cooking, radio and television. Alternative gas and electric supplies throughout for cooking. Separate ventilation ducts to be provided for blocks with internal lobbies. Heating to be by high-temperature hot water with radiators where called for in conditions. Boiler plant, plumbing, etc., to be in boiler basement adjacent to Golden Lane Road Entrance with flue stack carried up at the end of Block III. Pipes to all blocks to be carried underground and well lagged. Hot water supplies to be from calorifiers in airing cupboards. Lifts (11 in number) to be of low speed, self-operating type, with lift rooms on roofs, where installed for appearance in gallery access. The lifts to be arranged to stop at alternate floors.

ASSESSOR'S COMMENTS

The assessor wrote: "The design placed second also relies on a variety of blocks. The road layout is economical and practical. The dwellings themselves are very nicely planned."

SECOND PRIZE-WINNING DESIGN BY J. M. SCOTT AND A. F. SCOTT AND SONS

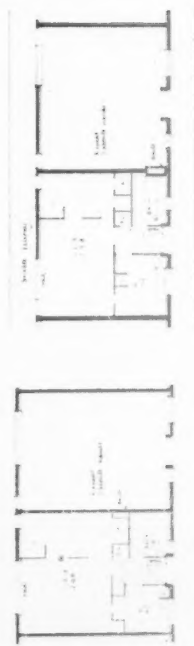
Type plans : at the bottom of page are three- and four-room types

GOLDEN LANE

TYPE PLANS

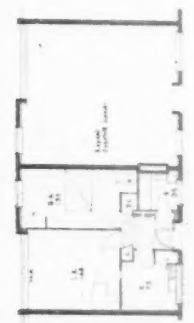
1/2" = 1' 0" 1/4" = 1' 0" 1/8" = 1' 0"

Minimum width of door 3' 0" Minimum width of window 3' 0"



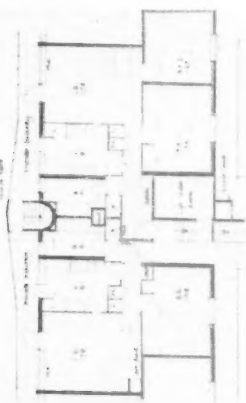
TYPE 104 1-4 ROOM UNIT 8' 0" x 12' 0" 1/2"

1 ROOM TYPES



TYPE 124 2-3 ROOM UNIT 8' 0" x 12' 0" 1/2"

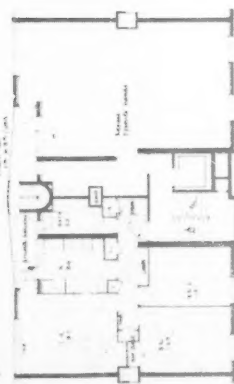
2 ROOM TYPES



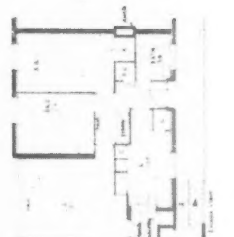
TYPE 134 3 ROOM UNIT 8' 0" x 12' 0" 1/2"

3 ROOM TYPE

TYPE 104 1-4 ROOM UNIT 8' 0" x 12' 0" 1/2"



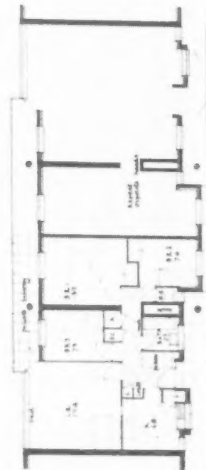
TYPE 124 2-3 ROOM UNIT 8' 0" x 12' 0" 1/2"



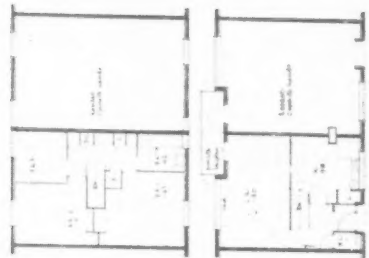
TYPE 134 3 ROOM UNIT 8' 0" x 12' 0" 1/2"



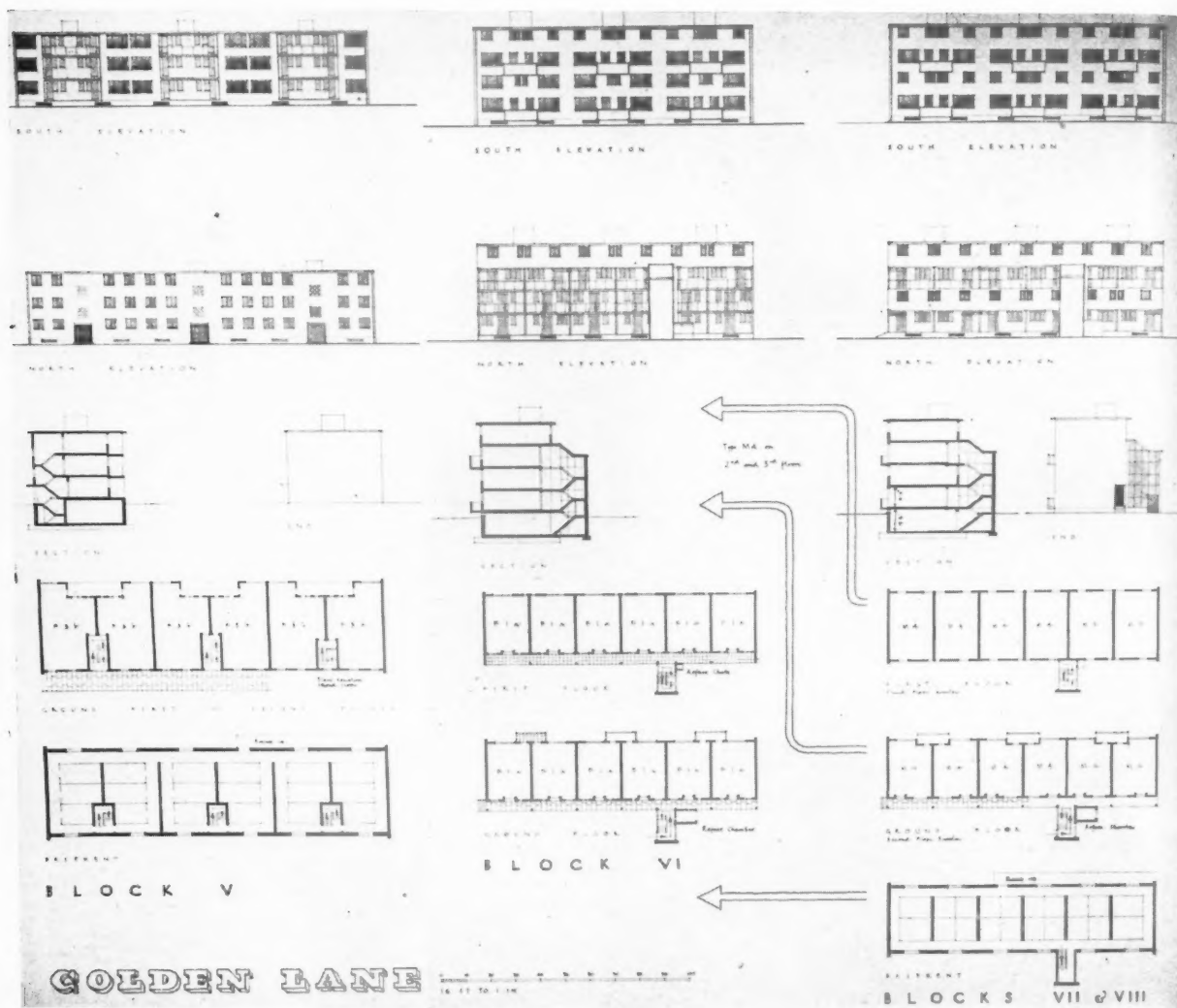
TYPE 104 1-4 ROOM UNIT 8' 0" x 12' 0" 1/2"



TYPE 124 2-3 ROOM UNIT 8' 0" x 12' 0" 1/2"



TYPE 134 3 ROOM UNIT 8' 0" x 12' 0" 1/2"



Plans and elevations of blocks v, vi, vii and viii of second prize-winning design

GOLDEN LANE HOUSING COMPETITION

THIRD PRIZE-WINNING DESIGN

BY WALTER W. FISK AND SIDNEY H. FISK

COMPETITORS' REPORT

The dwellings consist entirely of flats and are accommodated in four blocks, Block I being 12 storeys high, Block II partly 11 and partly 12 storeys high, Block III 9 storeys and Block IV partly 10 and partly 9 storeys high. With the exception of the third bedroom in some 4-room flats, all living rooms and bedrooms in Block I face west, in Block II east, and in Blocks III & IV, south. Many flat dwellers express preference for habitable rooms having one or other of the above aspects, and very often prefer to have the flat overlooking an important road for a degree of liveliness.

The aspects provided in the scheme, therefore satisfy a variety of tenant requirements.

CONSTRUCTION

"Box frame" concrete, 7 in. monolithic party, transverse and end walls; 5½ in. floor slabs. External walls; 7 in. solid reinforced concrete, 9 in. thick at rear of access balconies between window and door openings. Walls of top storeys between party walls and end walls; 4½ in. brick, 2 in. cavity, internal skins, 3 in. breeze. Access balconies cantilevered.

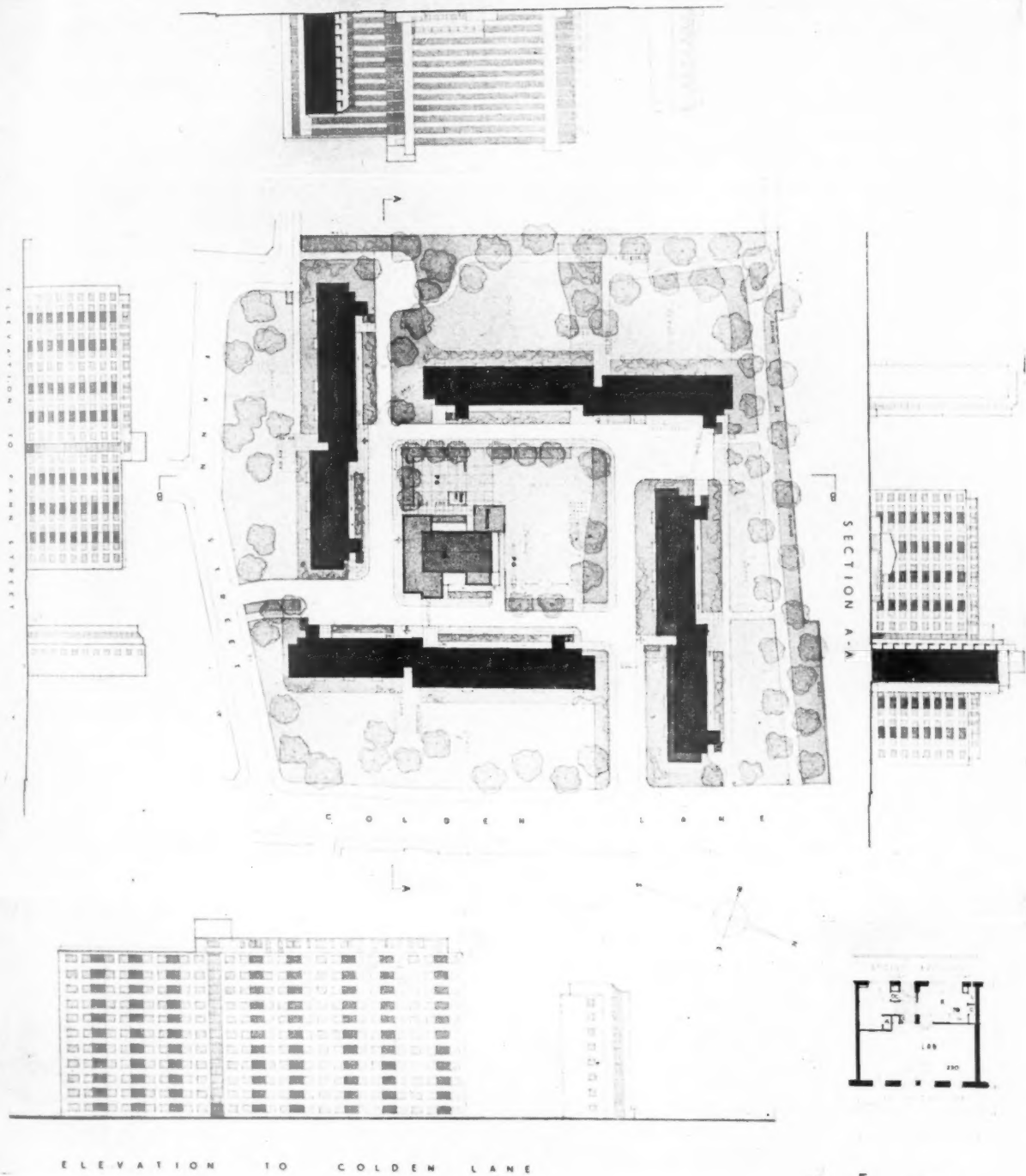
EXTERNAL FINISHES

Roof, three layers bituminous felt with

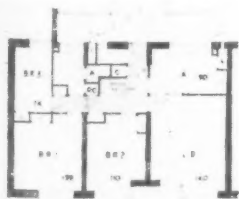
light weight reinforced concrete screed to falls; walls, 4½ in. yellow stock or flint lime facing bricks, supported at window level by 6 in. deep exposed continuous concrete ribs. Access balcony faced with precast concrete slabs with exposed aggregate used as permanent shuttering.

ASSESSOR'S COMMENTS

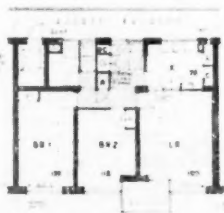
The assessor wrote of this scheme:—"This design consists entirely of high blocks... the arrangement of lifts and stairs is practical and economical. The layout is simple, but the garden spaces would be overshadowed by the high buildings."



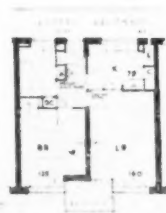
Site layout, elevations and detail plans of third prize-winning design



F.1 398 ft super
21 repeats



F.2a 500 ft super
108 repeats



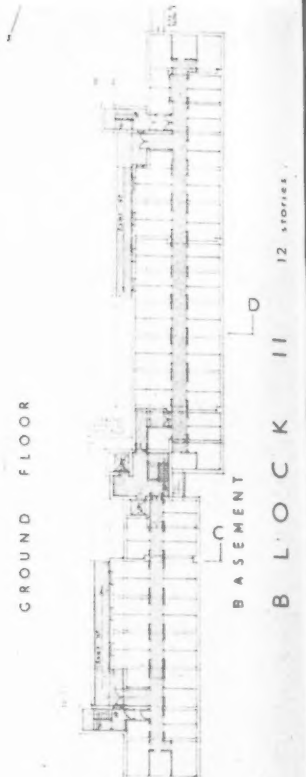
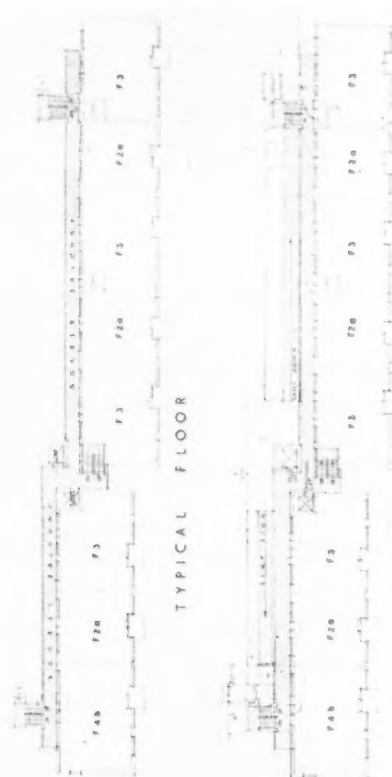
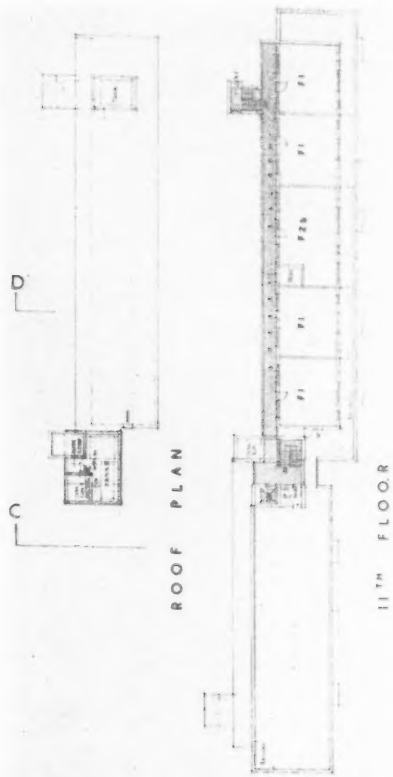
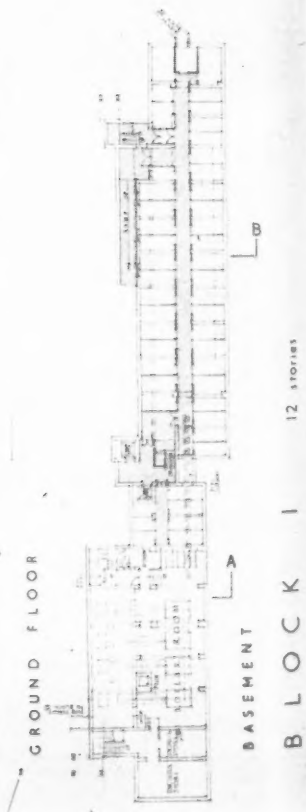
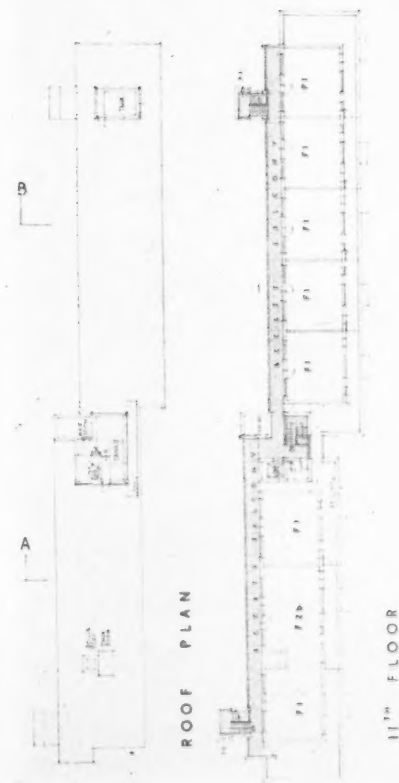
F.3 665 ft super
139 repeats

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THIRD PRIZE-WINNING DESIGN BY WALTER W. FISK AND SIDNEY H. FISK

Plans of blocks i and ii



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GOLDEN LANE HOUSING COMPETITION

FOURTH PRIZE-WINNING DESIGN

BY D. M. GREGORY-JONES

COMPETITOR'S REPORT

Of the eight elevations only four have been drawn and these are typical. The west external elevation is identical with the Golden Lane elevation but for the reduction in length containing maisonettes. North exterior elevation is similar to the south side of the courtyard but for the absence of "ways through" at ground level. The west side is identical with the east side but for the reduction in length of the central section. The north side is similar to the Fann

street elevation but for the absence of "ways through."

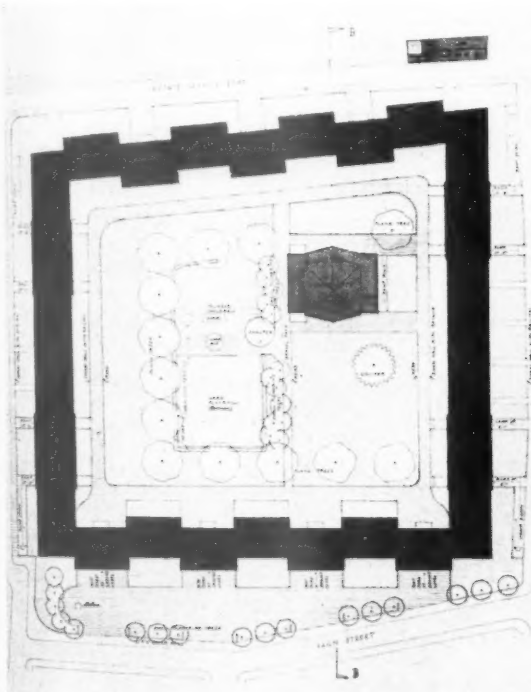
CONSTRUCTION

Load-bearing block walls 18 in. on ground floor level, 13½ in. above, cross walls and spine walls 9 in. brickwork in semi-engineering bricks up to third floor, and hard stocks above. Ground floor slab reinforced concrete. Other floors patent precast concrete construction spanning on the brick walls and/or trimming beams. The structurally supported staircase walls are constructed of 6 in. walls of concrete. Facing

brickwork London stock. Ground floor purple Sussex multi-stocks; faience tiles beneath living room windows. Copings, string courses, sills, artificial stone.

ASSESSOR'S COMMENTS

The assessor wrote: "The design placed fourth was the only one of its kind and the assessor felt that it should be recognized for its originality and independence of its treatment. The buildings are arranged in a solid quadrangle . . . Unfortunately it involves an excessive number of lifts."



SECTION 2A



SECTION 2B

Site layout elevations and detail plans



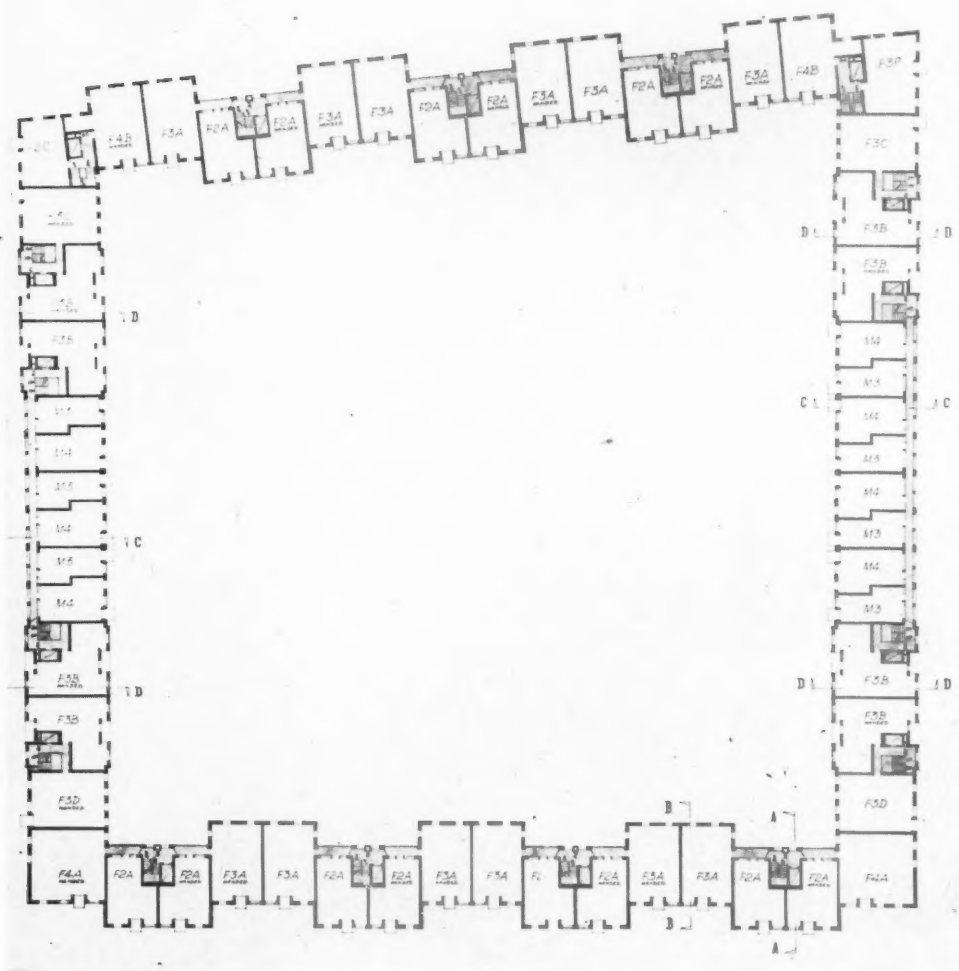
12 stories

BLOCK 1

12 stories

BLOCK 1

FOURTH PRIZE-WINNING DESIGN (continued)



First and third floor plan of fourth prize-winning design

F1A 14 THUS 372 #



F1B 1 THUS 362 #



F1C 2 THUS 365 #



F1D 4 THUS 422 #



Above and below, detail plans

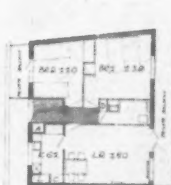
F3G 2 THUS 427 #



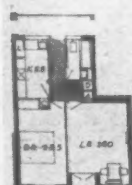
F3H 2 THUS 662 #



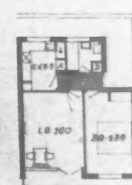
F3J 1 THUS 600 #



F2A 62 THUS 404 #



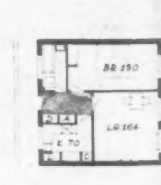
F2B 14 THUS 447.25 #



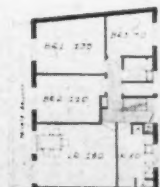
F2C 5 THUS 478.75 #



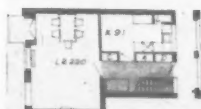
F2D 2 THUS 487.5 #



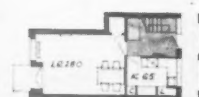
F4F 2 THUS 718 #



M4 14 THUS 981.25 #



M3 14 THUS 738.75 #



TECHNICAL SECTION

In this week's survey are described a number of developments in structural technique, some of which are particularly economical. It should not be assumed that all engineers approve of these new ideas; some prefer the well-trodden paths, especially as new structural methods sometimes involve them in highly complicated calculations.

Hence, one of the architect's many responsibilities is his choice of consulting engineer. An engineer who has imagination and who is receptive to new ideas, may, if consulted at a sufficiently early stage, save his client's money and the country's valuable materials, even if by doing so he reduces his own fee.

R. FITZMAURICE

This week's
special survey

18 CONSTRUCTION: THEORY recent developments

The number preceding the week's special article or survey indicates the appropriate subject heading of the Information Centre to which the article or survey belongs. The complete list of these headings is printed from time-to-time. To each survey is appended a list of recently-published and relevant Information Centre items. Further and earlier information can be found by referring to the index published free each year.

The week's survey of recent developments in structural technique is concerned mainly with the economical use of, and hitherto undeveloped possibilities of, reinforced and prestressed concrete. The JOURNAL's Specialist Editor No. 13 (structural engineering) has based his survey on two lectures given recently by F. J. Samuely—one at the ICE and one at the RIBA. Included in the survey (on pages 315 and 316) are brief descriptions of three recent buildings in the USA, in the design of which economy was the primary consideration.

Precast concrete has been used for many years. Although it was originally developed for beam units for floor slabs, it is now possible to erect entire buildings composed of precast units—columns, frames, purlins and panels. The main advantage of precasting is that it makes a concrete building nearly as simple to erect as a steel building. Moreover, factory production makes possible closer control of the quality of the concrete, with a resulting saving in

materials, and facilitates the production of attractive surface finishes.

The shape and size of precast units can be varied in order to simplify handling and transport. The many patents referring to systems of floor construction apply in every case to the shape of the component, not the method of construction, so that the development of precast construction in general is not restricted.

Precast concrete has, however, two principal disadvantages. Factory over-

heads and the cost of transporting units to the site tends to make precast concrete more expensive than *in situ*, and it is difficult to achieve continuity and rigidity in precast concrete structure.

COMPOSITE CONSTRUCTION

F. J. Samuely, in his recent lecture to the ICE, suggested that composite construction, consisting both of precast units and *in situ* concrete, provides a good compromise. Generally, the precast units can be used as the form-work for the *in situ* concrete, so that the advantage of eliminating shuttering is gained whilst continuity is kept.

In composite construction the precast units are kept as shallow as possible, for economy, but units become difficult to handle when their thickness is less than $\frac{1}{10}$ of their length. Flat slabs, even 2 in. thick, cannot be made longer than 6 ft. and consequently special shapes have been developed (Fig. 1). Trough units are very useful where a flat ceiling is not required or where a false ceiling is to be used, and they can be as little as 1 in. thick. The troughs become particularly rigid when the bottom lip is carried round all four sides and reinforced with a continuous bar, and they are capable of carrying the live loads whilst the *in situ* concrete is placed.

Where flat soffits are required, "T-," "U-," or box-shaped sections can be

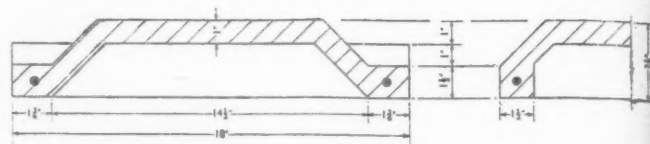
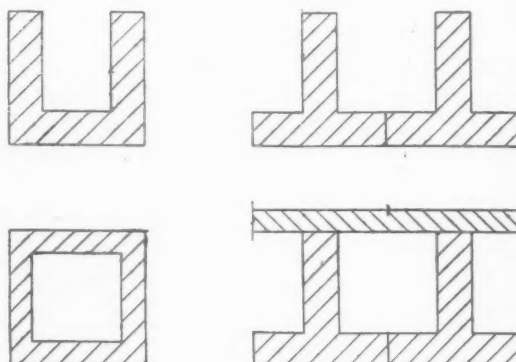


Fig. 1. Precast units suitable for handling.



used. The use of "T-" and "U-" sections result in a solid slab which is rather heavy, and this often makes them unsuitable for light constructions. The box-section is more expensive to produce, but it gives a lighter slab and has been widely adopted for proprietary floors.

Precast beams should extend only up to the soffit of the floor slab. This may make them extremely shallow, so they can be stiffened by introducing into them the stirrups for the whole beam and even the top reinforcement as well. Furthermore, diagonal bars can be introduced to make a latticed girder out of the steel reinforcement, or some of the stirrups can be placed diagonally. This gives the precast section greatly increased stiffness during transport.

Precast concrete flooring units of the type described by Mr. Samuely have been available for some time. The type of unit which consists of top and bottom bars, with stirrups tack welded and the bottom bars concreted into a 2-in. thick plank, probably provides the best monolithic and continuous floor when combined with thin soffit fillers. The inner skin roof of the Royal Festival Hall is a typical example of this type of construction. By using proprietary precast units on steel arches, the *in situ* concrete of the transverse section was capable of acting as an arch, spanning between the auditorium walls, while the longitudinal monolithic section acted as a continuous slab carrying the incidental loads to the steel arches.

PRESTRESSED COMPOSITE CONSTRUCTION

Mr. Samuely believes that, ultimately, composite construction (of precast and *in situ* concrete) will be widely adopted in preference to other methods of construction. However, it is with prestressed concrete that composite construction becomes most economical compared with reinforced concrete and steel, particularly for spans of 20 ft.

40 ft., for which normal prestressed concrete is not usually economical. The reason is that in an ordinary precast prestressed concrete beam, the concrete in the compression zone is of the same quality as that in the tension zone; whereas, in a composite member only the precast lower flange need be of high quality prestressed concrete. Hence the tension is concentrated in the precast part of the member and the minimum amount of reinforcement is required.

Fig. 2 shows the savings which might be achieved if various types of prestressed beams were used instead of a reinforced concrete beam, when the ratio of permissible stress in the high tensile steel to that in the mild steel is 8:1 and the ratio of the cost of the high tensile steel (stressed) to that of the mild steel is 3:1. The figures indicate that the saving achieved by using the composite prestressed member instead of an ordinary prestressed beam can be as much as 50 per cent. In comparing composite construction with ordinary reinforced concrete, it should be borne in mind that only the cost of reinforcing steel is compared and the gross saving will not be as large as the figures quoted, particularly if only a small number of units are required.

Three practical types of prestressed composite concrete constructions are shown in Figs. 3, 4, and 5. Fig. 5 shows a number of prestressed "T"-sections, which are set side by side and filled in with *in situ* concrete to form a slab. While the webs are not very useful for prestressing, they do stiffen the unit against damage during transit, increase its resistance to shear and provide a good bond between the *in situ* and the precast concrete; the *in situ* concrete shrinks around the head of the "T." Fig. 4 also shows "T"-sections which can be used individually or for rib and slab construction. Where ribs project below the actual slab, either

Fig. 2.

| Type of Beam | Description | Saving against R.C. |
|--------------|---|---------------------|
| — | Reinforced concrete | — |
| A | Prestressing wires at lower edge of middle third | 10% |
| C | Prestressing wires at lower edge of beam; mild-steel reinforcement at top | 17.5% |
| B | "I"-section. Prestressing wires at 0.25d. below centre. | 40%* |
| D | Lower part of beam below neutral axis prestressed independently. | 58.3% |
| E | Lower part of beam containing reinforcement prestressed independently. | 62.5% |

* Mould costs are heavier in this case.



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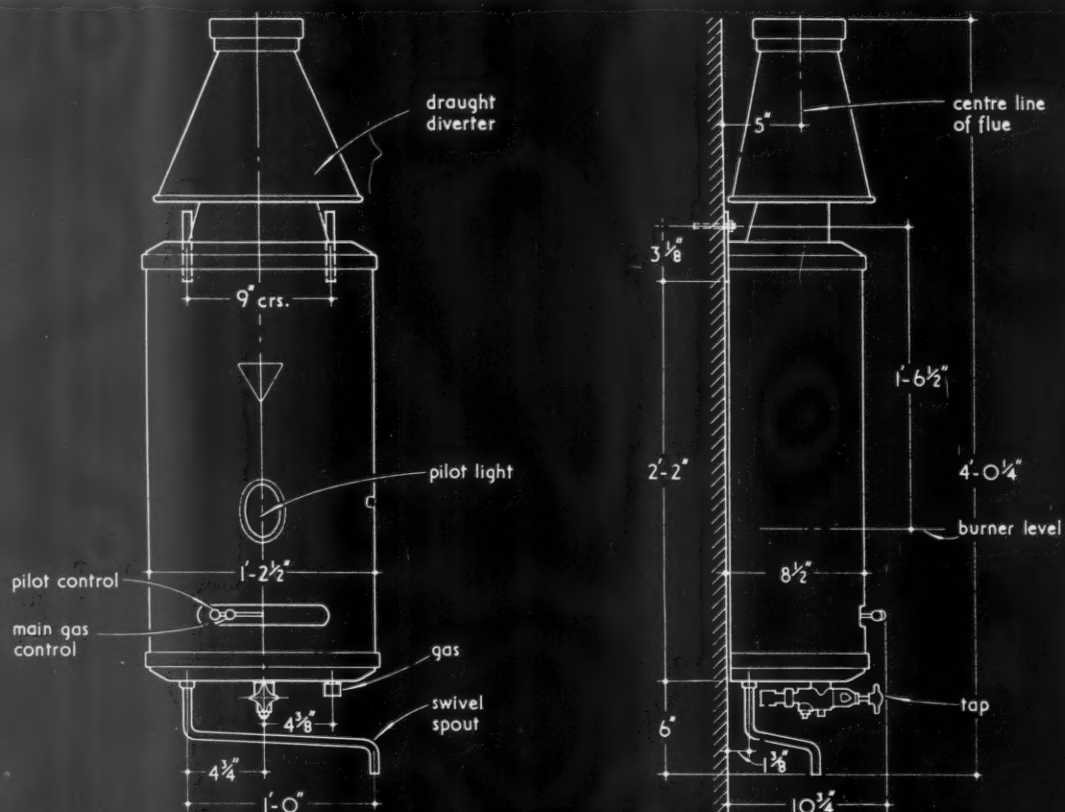
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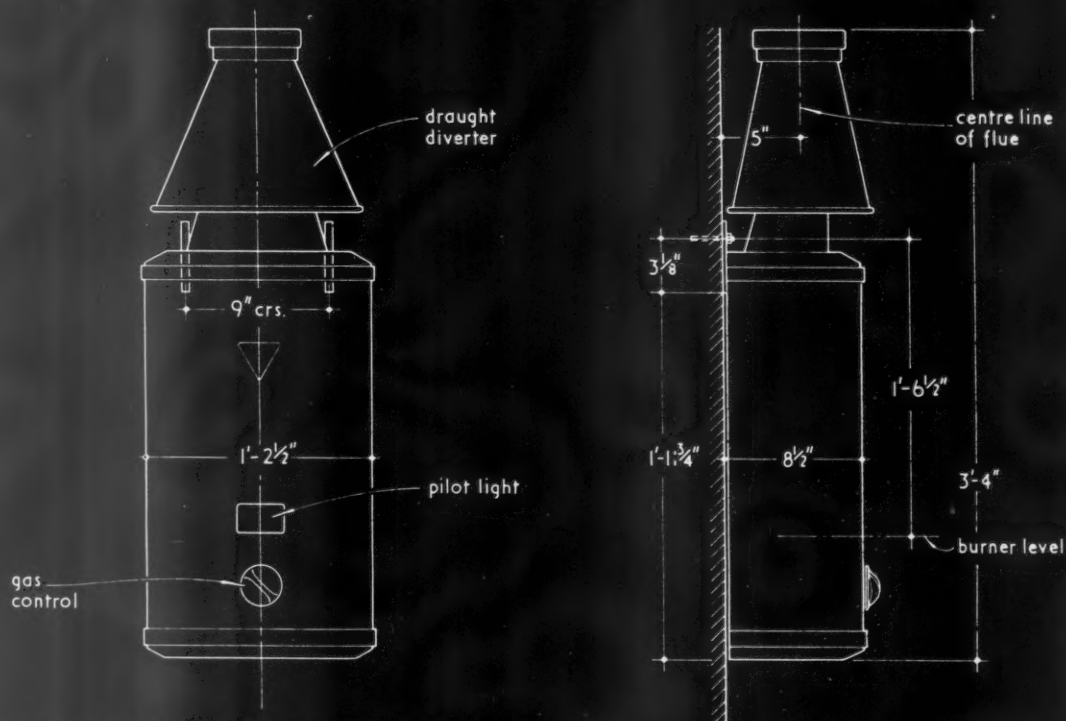
32.C20

The Architects' Journal Library of Information Sheets 353. Editor: Cotterell Butler, A.R.I.B.A.

REVISED 6.3.52



TYPE SG.32/1 LARGE SINGLE POINT HEATER WITH SWIVEL SPOUT
providing hot water supply to bath and adjacent basin, or large sink, etc.



TYPES 709 AND 709B MULTI-POINT HEATERS.
providing hot water supply to bath, basin and kitchen sink, or three cloakroom basins, etc.

32.C20 ASCOT INSTANTANEOUS GAS WATER HEATERS

This Sheet supersedes Sheet 32.C20 published 5.2.48. It describes Ascot instantaneous gas water heaters. It should be noted that heater NEA. 32/6 has now been replaced by heaters 709 and 709B and any reference, therefore, to NEA. 32/6 in other Sheets in the series should be altered accordingly.

Type SG. 32/1: This heater is designed to provide a single point hot water supply to a bath by means of a swivel spout outlet which can also serve an adjacent bathroom basin.

Type SG. 32/1 is an open-outlet pressure operated heater and must on no account be connected to any restriction in the form of taps, valves, piping or fittings other than those recommended by the manufacturer. (See subsequent Sheets in this series).

Types 709 and 709B: Heater type 709 is designed preferably to be supplied with water from a tank; 709B is essentially for mains water supply and has been designed to contend with varying water pressures. The heaters provide multi-point hot water supply to the hot taps at bath, basin and kitchen sink. One heater will serve three cloakroom basins in schools, offices, etc., and also two showers or a 'Quickspray' Wash Fountain. (See subsequent Sheets in this series.) Where a solid fuel boiler is installed, the heater may be connected as an alternative hot water system immediately available for use when the boiler supply is not required. (See subsequent Sheets in this series.)

Characteristics

Output: 3·25 gal./min. raised through 40° F., or
2·5 gal./min. raised through 50° F., or
1·25 gal./min. raised through 100° F.

Input: 1,625 B.Th.U./min.
or 3·25 cu. ft./min. of 500 C.V. gas.

Components

Automatic valve: Prevents gas passing to the burner unless a predetermined minimum flow of water is flowing through the heater. The type 709B also incorporates a water governor and five-position temperature selector. With this heater constant water flow is provided irrespective of water pressure fluctuation.

Heating body: Coil-cooled combustion chamber and two-stage finned type heat exchanger.

Burner: SG. 32/1—Luminous pinhole type, incorporating pilot safety device.

709 and 709B—Thin flame type made of stainless steel and incorporating pilot safety device.

Main gas and pilot controls: These are interlocking on all types. The SG. 32/1 is fitted with a lever type main gas control and the 709 and 709B are fitted with a rotary type control.

Draught diverter: Integral with the heater, with socket for 5-in. internal diameter flue.

Hot tap and outlet spout: Fitted to type SG. 32/1 heater. Chromium plated swivel spout; standard 12 in., non-standard at extra cost 18 in. and 24 in. (where these are not of sufficient length the manufacturer should be consulted).

Finish

White vitreous enamel. Visible fittings chromium and nickel plated.

Installation

Position: Grouting bolts and hanging brackets are supplied. To facilitate regulation and maintenance, the heater should be fixed so that the burner level is approximately 4 ft. 9 in. from the floor and in such a position that an adequate intake of air is assured. With types 709 and 709B, the heater should be installed as closely as possible to the most frequently used draw-off tap (normally at the kitchen sink) taking into consideration the necessity for an efficient flue installation.

Gas

Connection: SG. 32/1— $\frac{1}{2}$ -in. tapered B.S.P. male thread.

709 and 709B—1-in. tapered B.S.P. female thread.

Supply pipe: Up to 15 ft. from the meter— $\frac{1}{2}$ in. int. dia.
15-30 ft. from the meter—1 in. int. dia.,
Over 30 ft. from the meter— $1\frac{1}{2}$ in. int. dia.

Meter: Rated capacity to be 200 cu. ft. per hour minimum in addition to requirements for all other gas appliances.

Stop cock: Must be fitted in the supply line close to the heater to facilitate maintenance.

Water

Tank supply: Type SG. 32/1—Minimum head required 8-10 ft. measured vertically from the level of the water in the tank to the spout outlet.

Type 709—Minimum head required 10 ft. measured vertically from the level of the water in the tank to the highest draw-off point.

Mains supply: Permission must be obtained from the Water Authority.

Types SG. 32/1 and 709—Although tank supply is preferable, these heaters may be connected to the mains; the minimum pressure required is $4\frac{1}{2}$ lb./sq. in. Type 709B—Minimum pressure required, 15 lb./sq. in.

Connection: Type SG. 32/1— $\frac{1}{2}$ -in. tapered B.S.P. male thread.

Types 709 and 709B— $\frac{1}{2}$ -in. tapered B.S.P. male thread.

Supply pipe: Mains— $\frac{1}{2}$ in. to $\frac{3}{4}$ in.

Tank— $\frac{1}{2}$ in. to 1 in. dependent on the head of water and length of run.

A stop cock (of pattern approved by Water Authority) must be fitted in the cold water supply close to the heater.

Flue

A flue is required; this should be 5-in. internal diameter asbestos-cement.

For detailed information on the design of flues, see subsequent Sheets in this series.

Compiled from information supplied by:

Ascot Gas Water Heaters, Ltd.

Head Office: 43, Park Street, London, W.1.

Telephone: Grosvenor 4491.

Works: Ascot Works, Neasden, London, N.W.10.

Telephone: Willesden 5121.

Telegrams: Gascot, Phone, London.

Branch Offices and

Service Depots: Belfast, Birmingham, Bournemouth and Glasgow.

Service Depots: Bristol, Cambridge, Manchester, Oxford, Southampton and Stoke.

BUILDING SCIENCE | MATHEMATICS | SLIDE RULE

2.A5

The Architects' Journal Library of Information Sheets 354. Editor: Cotterell Butler, A.R.I.B.A.

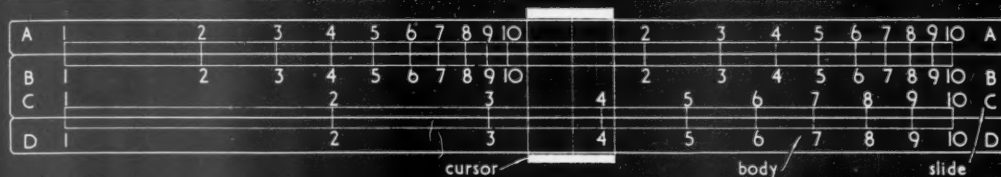
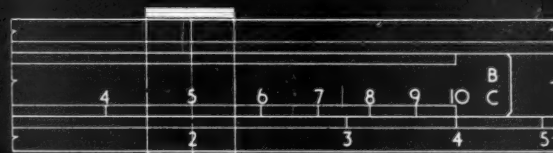


DIAGRAM OF SLIDE RULE. (intermediate markings omitted)

MULTIPLICATION: 4×2

place 1 on C opposite 4 on D
move cursor over 2 on C
read answer 8 opposite on D

MULTIPLICATION: 5×4

place 10 on C opposite 4 on D
move cursor over 5 on C
read answer 20 (2) opposite on D

DIVISION: $8 \div 2$

place 2 on C opposite 8 on D
move cursor over 1 on C
read answer 4 opposite on D

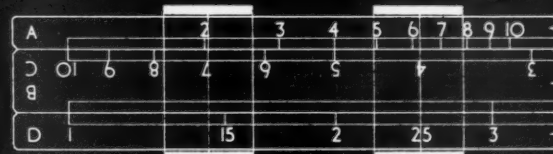
DIVISION: $2 \div 5$

place 5 on C opposite 2 on D
move cursor over 10 on C
read answer .4 (4) opposite on D



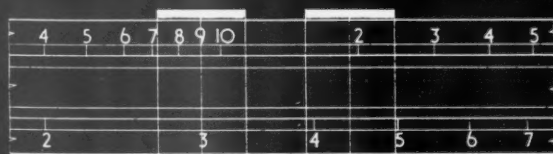
COMBINED MULTIPLICATION
AND DIVISION: $37.5 \times 112 \times 56 \div 5$
2240 x .875

move cursor on 375 on D and bring
224 on C in line
move cursor to 112 on C, place 875 on
C under cursor, move cursor over 565
on C, read answer 121 on D



RECIPROCAL:
4 and 7

reverse slide, place right index of C in line
with left index of A
move cursor over required number on C
read answers .25 (25) and .143 (143) on D



SQUARES: 3 and .0434

move cursor over required number on D
read answers 9 and .00188 (188)
opposite on A



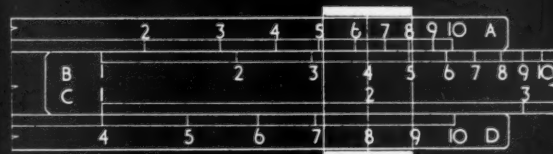
SQUARE ROOTS:
625 and .227

move cursor over required number on A
read answers 25 and .477 (477)
opposite on D



CUBE: 3

place 1 on C opposite 3 on D
move cursor over 3 on B
read answer 27 opposite on A



CUBE ROOT: 64

move cursor over 64 on A
place 1 on C opposite same number on D as
appears under cursor on B, the number is 4

2.A5 THE SLIDE RULE

This Sleet describes the slide rule. The diagrams and notes on the face illustrate a typical rule and show its use for different types of calculation; the notes below give a general description of the rule and also further notes on the operations involved for the various calculations.

Description

Scales A and D are fixed to the body of the rule; scales B and C are on the slide. It will be noticed that scales A and B are similar, and that scale C is similar to scale D.

Also, the distances used to represent logarithms on scales A and B are exactly half those used on scales C and D.

The cursor, a transparent sliding frame, is used to mark any required reading on the scale.

The ends of the scales are called the right and left indexes.

Multiplication and Division

If the problem involves only multiplication or division it is best worked on the C and D scales since these scales can be subdivided to a greater degree of accuracy than can A and B.

Position of Decimal Point

Take the two simple examples shown for multiplication. It will be seen that the numbers marked on the scales have no "place" value. For example the figure 5 will also represent 50, 500, .5, .05, etc. (Compare this with the method of using logarithmic tables). Hence, when the answer is given by the slide rule, its true value is only obtained after placing the decimal point.

The method advocated for finding the position of the decimal point is by "rough estimate." In the second example illustrated the answer appeared as 2. Inspection gave the true value as 20.

If the product were $.4 \times 500$ the slide rule would again indicate 2 as the answer and the rough estimate would be necessary before the true value, 200, was obtained.

Combined Multiplication and Division

Many practical problems require the calculation of an expression which includes repeated multiplication and division.

If we take the processes of division and multiplication alternately we shall find that we reduce the movements of the slide rule by nearly a half. Work the calculation shown in the diagram in the order: $37.5 \div 2240 \times 112 \div .875 \times 56.5$.

Reciprocals

Reverse the slide, as shown in the diagram. Bring the right index of C in line with the left index of A.

To find the reciprocal of a number, mark the number on C with the cursor line and read the answer under the line on D.

Squares

If we take a reading on scale D and then, by means of the cursor line, transfer to the corresponding position of scale A, we are really multiplying the logarithm of the first number by two, or in effect we are squaring this number. For example, if the cursor line is at 3 on D it also marks 3^2 (i.e. 9) on A.

To square a number we first find the number on scale D and, by use of the cursor line, find the corresponding reading on scale A.

Square Roots

If we reverse the above operation and read from A to D the square root is obtained.

Since there are two parts to scale A we must apply the following rules:—

Use the left half of scale A when:

(a) the number is greater than 1 and contains an odd number of digits before the decimal point:

e.g., $\sqrt{8.7}$ $\sqrt{250}$ $\sqrt{63500}$

(for $\sqrt{87.5}$ $\sqrt{2550}$ $\sqrt{635000}$ use right half)

(b) the number is less than 1 and there are an odd number of noughts between the decimal point and the first significant figure:

e.g., $\sqrt{.05}$ $\sqrt{.000725}$

(for $\sqrt{.00598}$ $\sqrt{.725}$ use right half)

Cubes

The method can best be understood by taking the simple case of 3^3 , illustrated in the diagram. Place the left index of C in line with the 3 on D. Move the cursor line to the 3 on B and the answer appears under the cursor line on A. Try similarly 4^3 . With 5^3 , 6^3 , etc., it will be found that the right index of C must be placed in line with the number on D.

Cube Roots

Again let us reverse the preceding process. Take the simple example $\sqrt[3]{64}$. Mark 64 on the right side of A by means of the cursor line. Now move the slide until the left index of C is in line with the same number on D, as appears under the cursor line on scale B. The number is 4.

A difficulty occurs in deciding which index of C and which side of scale A are to be used. To overcome this difficulty the following method is suggested:

Let us find $\sqrt[3]{550}$. Rough estimate tells us that the answer is approximately 8. Place the slide rule in position for finding 8^3 , and we find that the right index must be used, and either side of A may be used. Hence place the cursor line on 55 on A and using the right index we get the answer 8.2.

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a false ceiling is used or burnt clay units are introduced to give the appearance of a solid slab. The main advantage of this method of construction is that an economical section, resembling an "I"-section, is achieved; the *in situ* concrete forming the top slab and the bottom flange and web being prestressed.

Fig. 5 shows a method of construction which has been used repeatedly for multi-storey buildings, often making possible the omission of intermediate columns. As shown, only the lower part of the tensile area is prestressed and no attempt is made to produce a prestressed web. The advantages of this method of construction are particularly apparent when it is necessary to use a wide but shallow beam. This may, in fact, be more economical than the thin, deep beam, thus reversing the economics of ordinary reinforced concrete design. The types of unit which builders find most convenient to use are the flat plank or the "T" section; *in situ* concrete being used to make up the required floor thickness.

CONTINUOUS CONSTRUCTION

A special application of this type of construction occurs in continuous structures where the units provide the shuttering and counteract the positive moment, and the negative moment is carried by mild or high-tensile steel reinforcement. However, this is not logical when the negative moment is greater (as it usually is) than the positive moment. For, at the support the compressed unit would be subject to further compression. A solution used in the Colodense factory at Bristol (JOURNAL for April 19, 1951) was to stagger the prestressed planks within the depth of the slab, so that there could be some ordinary concrete in the lower half of the slab over the supports. This has the disadvantage that if this concrete is placed *in situ* some shuttering must be used, and if it is precast the units will be of awkward shape and size.

COMPOSITE CONSTRUCTION FOR BLOCKS OF FLATS

Blocks of flats enable large firms of contractors to play a full part in the housing programme, but large blocks of flats of conventional design require steel, either for reinforced concrete or for structural framing. The former is more economical in steel, and, by introducing floor slabs of the type described above, a further saving in steel may be effected. In the proposed scheme for the re-development of Clydebank, the central area is to consist of a number of blocks of flats of four to ten storeys, and the stipulation has been made that the costs should be comparable with those of normal two-storey dwellings. The

whole structure is to be of a composite nature. Cross walls are to be constructed of patent concrete blocks, consisting of two $1\frac{1}{4}$ -in. slabs, each 18 in. by 9 in., held 4 in. apart by metal ties (see Fig. 6, reproduced by permission of the *Builder*). The cavity is to be filled with high-quality concrete. Prestressed concrete planks, 2 in. deep and 6 in. wide, will be laid between adjacent cross walls, with a bearing of $1\frac{1}{4}$ in. on each wall. These planks have interlocking edges, are sufficiently strong to carry their own weight over 18-ft. spans and, when supported at mid-span, are capable of carrying the live loads of the *in situ* concreting. For spans up to 14 ft. no props are needed. If the spans are greater, the planks can be jacked up at the centre before the concrete is poured, so that, when they are released, after the concrete has hardened, there is an extra degree of post-stressing. Light reinforcement will be placed over the cross walls in order to make the structure monolithic, and the 1-in. topping will be bonded to the prestressed units by means of a grooved surface.

BOND

Opinions as to how bond between the prestressed units and *in situ* concrete should be achieved vary. Re-

search in Sweden and at Imperial College indicates that a roughened surface is sufficient, but Mr. Samuely insists on a system of castellations in the upper edge of the prestressed member or the use of stirrups; certainly, these methods cut out the human element, which, on the site, so often leads to joints in concrete being made badly.

Hollow tile units can be used in composite work in the same way as precast concrete units, with similar advantages. Special hollow tile units are made with grooves to take prestressing wires. The units are placed end to end; the wires are stressed and grouted in; and, after the concrete has set, a beam is formed. In some factories in Switzerland the beams are

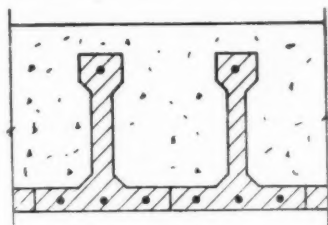


Fig. 3. Composite prestressed concrete construction with prestressed inverted "T" sections and in situ concrete filling.

Fig. 4. Composite prestressed concrete with prestressed inverted "T" sections and precast or in situ slab.

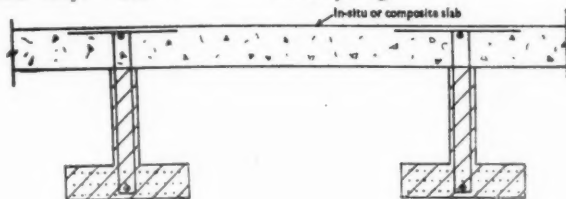
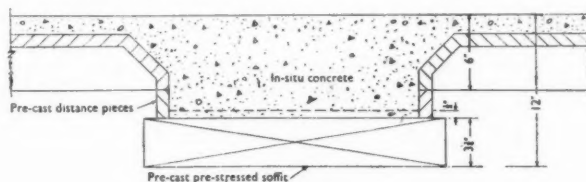
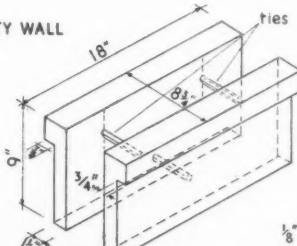


Fig. 5. Composite prestressed concrete with lower part of tensile zone prestressed.



PARTY WALL



FLOORS

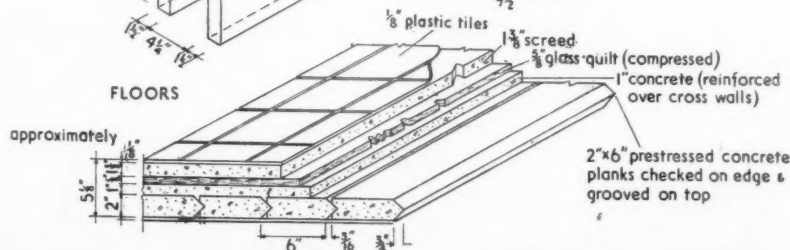
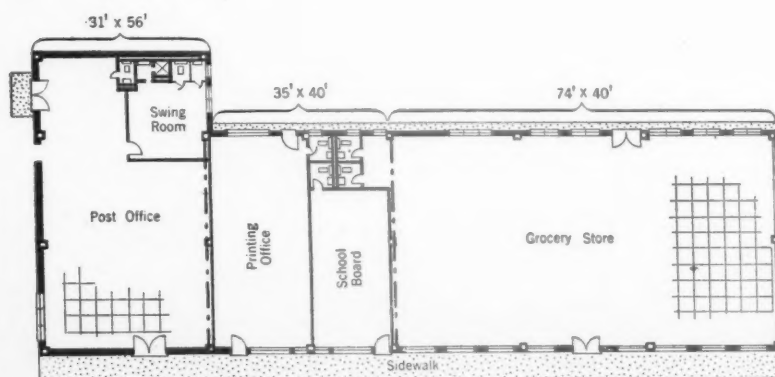


Fig. 6. Constructional details of proposed flats at Clydebank.

AN ECONOMICAL LONG-SPAN CONCRETE ROOF

The specially-designed steel pan forms, seen in the photograph on the right, were used for the roofs of single-storey shops at Spring Branch, Texas. Interior columns were eliminated and the method of construction proved to be rapid and economical. The building is L-shaped and, apart from a continuous edge beam, has only two transverse beams. These occur at the divisions between shops (see plan below). There are, therefore, three areas, of 74 ft. \times 40 ft., 35 ft. \times 40 ft. and 31 ft. \times 56 ft. respectively, free from columns and beams. The roof is of a modified two-way span design, continuous over the transverse beams in the 140-ft. length of the building and simply supported across the 40-ft. span. The steel pans, 3 ft. square and 8 in. deep, were used to cut down dead weight. The ribs formed between them in both directions are 6 in. wide. A 2½-in. concrete topping on the pans gives a total depth of 10½ in. The finished slab has a dead load of 63 lb./sq. ft. and a live load of 30 lb./sq. ft. Reinforcement consists of two 1½-in. square bars in the short span and two 1-in. round bars in the long span. The metal pans were 16-g. steel and had removable corner pieces to make them collapsible for easy removal and re-use. The 3-ft. square module was chosen to allow the pans to be used for different jobs. Wood units had been ruled out because they could not be re-used often enough to make them practical. The photograph above, of the finished ceiling before painting, shows clearly the structural ribs formed between the pans. The architect was F. Perry Johnston; consulting engineer, R. L. Reid. (For further information, see Civil Engineering [USA], September, 1951, pp. 32-33.)



fabricated in various lengths and supplied to local builders who can then saw off, say, half a unit, to achieve a site dimension. In this field, and in composite work generally, no review would be complete without reference to the work of Dr. P. W. Abeles, who has written many articles on the technique and carried out much research. (See Information Centre item 17.55: 4.8.48.)

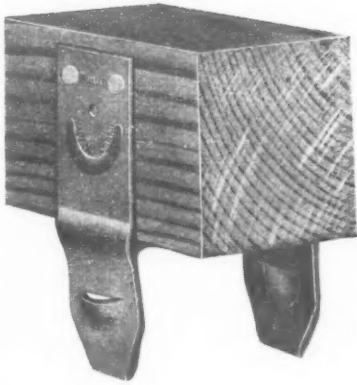
SPACE FRAMES

A week after Mr. Samuely gave his paper on practical aspects of prestressed composite construction, he gave a lecture to the RIBA on the possibilities of space frames and stressed skin construction. Fig. 7 illustrates the connection between the two: "a" shows a three-member star beam in one plane; "b" shows a space frame obtained by elevating the centre junction; and "c" shows the stressed skin produced when the pyramid is sheathed by membrane walls. Starting with a ring or a polygon, and by raising the centre point, various structures such as domes, pyramids and truncated versions of both can be produced.

The star beam can be constructed in reinforced concrete, steel or timber; "a" is the simplest arrangement—the arms being rigidly connected at the centre. The system can be extended so that the arms form beams on the diagonals of a hexagonal or octagonal roof slab. In one plane, a ring beam may be useful; i.e., a circular beam supported on a number of columns or even a segment of a circle on a minimum of three columns.

THEATRE BALCONIES

The space frame, as already shown, can be closely associated with the stressed skin and the two can be used together when the occasion demands. In Fig. 8 two types of cinema or theatre balcony are indicated. Fig. 8a is a section of the balcony of the Royal Festival Hall. It shows the main beam and torque box. Most theatre balconies are supported on girders carrying cantilevered beams anchored into the rear wall of the building. This was not feasible in the Festival Hall, as the main beam had to be too near the rear wall, and it was decided, therefore, to separate the balcony structure from the rear wall and form it into a box. The box then relieves the beam of all torsional, out-of-balance moments by plate forces (shown dotted) and these forces are carried into the side walls. The advantage of this system is that the vertical loads on the balcony girder are not amplified by the lever effect of the cantilever beams, but if the layout of the theatre is such that the rear of the balcony overhangs the foyer, as it very often does, or if the length is such that the cantilevers are almost balanced,



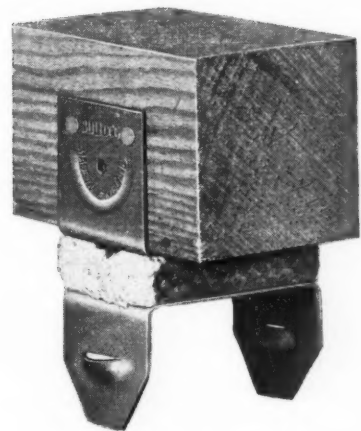
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then a cantilever anchored to the rear wall will be more economical.

The alternative scheme shown in Fig. 8b is a combination of the torque box and the star beam. The torque box follows the contour of the balcony front, thus it has the maximum possible depth of beam at the centre. The lower member is shown in the diagram as a concrete slab, but the top member is a lattice girder made up of precast members, as the floor is to be built-up on top of it.

In a recently-completed American office building* light-steel space frames were used in a horizontal beam. The building is three storeys high and 53 ft. by 370 ft. on plan. To make possible a system of continuous double glazing, unhampered by large columns or edge beams, panes of glass 56 in. wide were used between columns consisting of 8-in. by 4-in. angles welded toe to toe to form a box. The columns were spaced at 5-ft. 2-in. centres along the 370-ft. elevation, so that the beams had to span the 52 ft. width. Triangular trusses, 29 in. deep, were used; the apex of each truss pointing downwards as shown in Fig. 9. The open nature of the space frame allowed all



Fig. 7a.

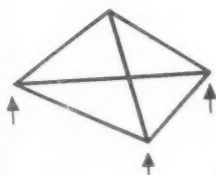


Fig. 7b.

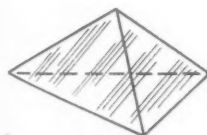


Fig. 7c.

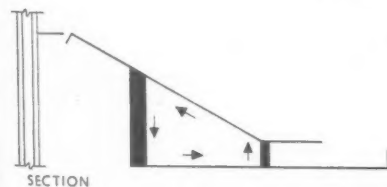


Fig. 8a.

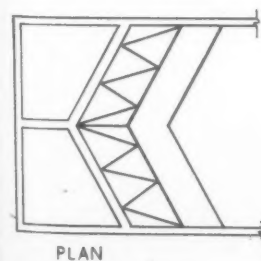
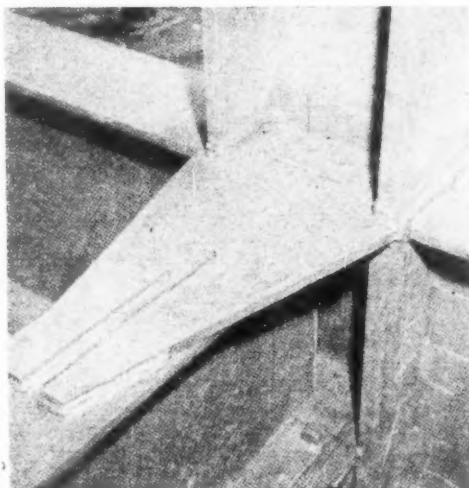


Fig. 8b.

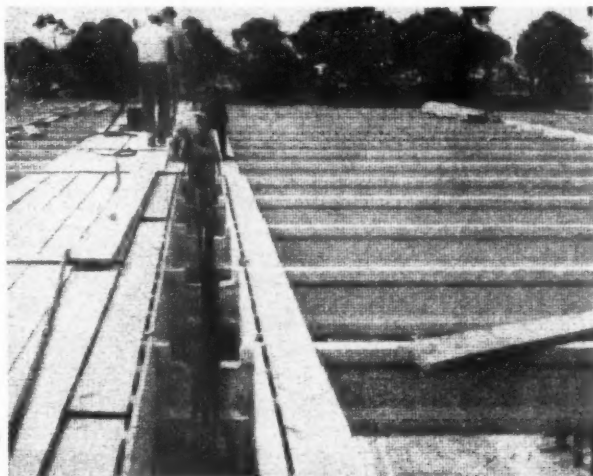
TWO BUILDINGS DESIGNED TO SAVE STEEL

Simplified design and the use of welding saved 15 per cent. of the steel required for a four-storey, Beverly Hills, department store. The store is 225 ft. x 320 ft., with columns generally on a 32-ft. square grid. In one group of six bays lower columns are avoided by supporting the upper storey columns at mid-span of the 64-ft. long plate girders, thus providing a 64 ft.



x 192 ft. concourse directly in front of the main entrance. A welded design was chosen with a frame continuous in all directions, thereby making possible a reduction in the depth of the girders and, hence, in the height of the building. The main section used was a 27-in. broad flanged beam, with a weight of 102 lb. per ft. run, continuous over the 320-ft. length. 47-ft. lengths were erected giving cantilever stubs 7½ ft. long and leaving 17-ft. gaps to be filled by similar sections welded into position. The photograph above shows a beam to column connection. Note the slot in the plate which provides extra weld area. Architects were Pereira & Luckman and Charles O. Matchman; structural engineers, Paul E. Jeffers and Robert Wilder. (For further information, see Engineering News Record [USA], October 18, 1951, p. 51.)

A steel-framed roof was designed for a low-cost warehouse in Miami, but steel for the roof framing was not forthcoming and the engineer, Jules P. Channing, had to produce an alternative design without increasing the cost of the building. A conventional reinforced concrete framed roof would have been too expensive but a compromise was made by having in situ girders, precast joists and in situ light-weight slabs. Columns, 17 ft. high on a 20-ft. grid, are of concrete-filled steel pipes. Girders, 20 in. deep, and 12 in. wide, span 20 ft. in one direction, while precast joists at 6-ft. centres, supported on the girders, span 20 ft. in the other direction. The joists are 14 in. deep, of "I" section and so placed that the tops of joists and girders are flush. For the 6-ft. span between the joists a 3-in. gypsum slab was poured in situ. (For further information, see Engineering News Record [USA], October 18, 1951, p. 37.)

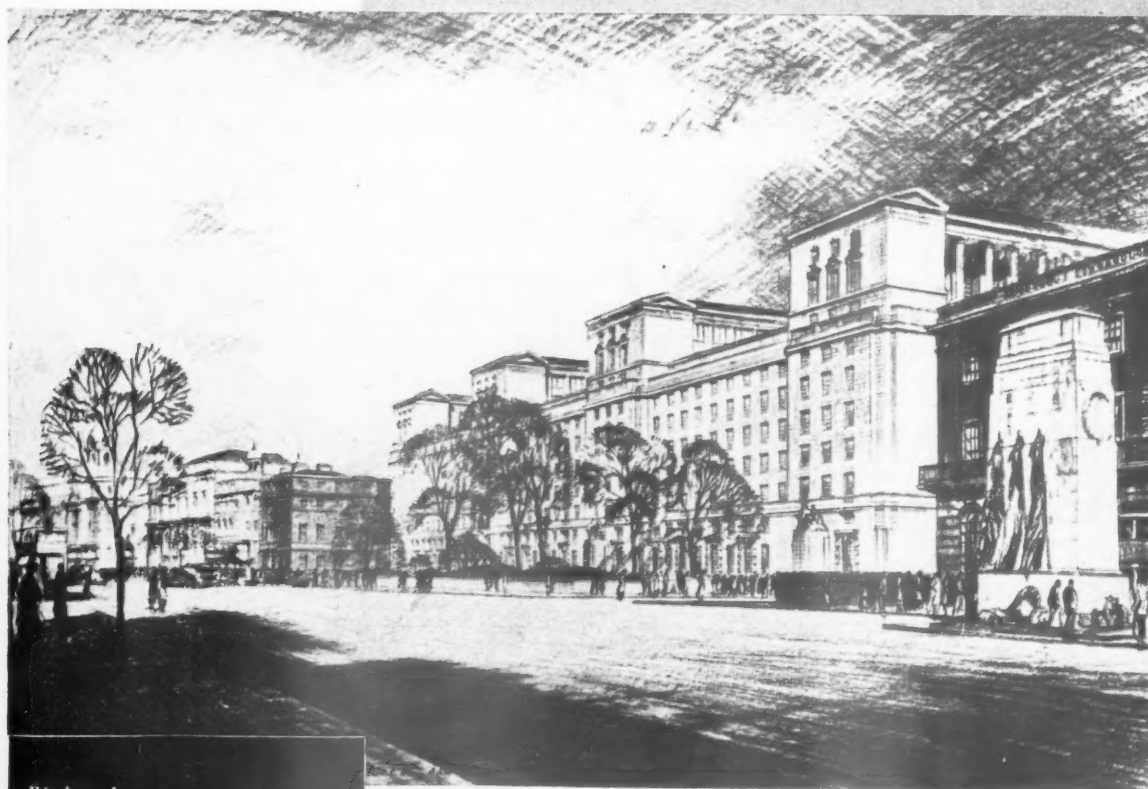


★ **P**rominent on the London scene are the new Whitehall offices being constructed by Richard Costain Ltd., the first stage of which is now approaching an advanced state of completion as can be seen by the illustration adjoining. The drawing reproduced below shows how this fine Government building will look when fully completed.

Architect:
E. VINCENT HARRIS, R.A.
Consulting Engineers:
R. TRAVERS-MORGAN & PARTNERS



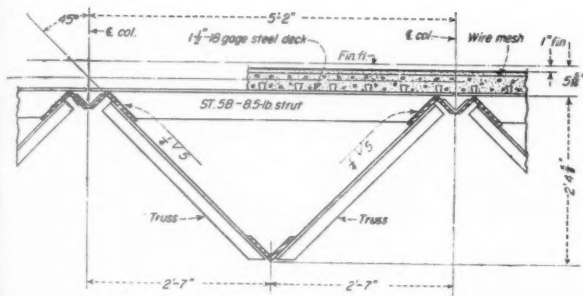
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the ducting to be carried out within the depth of the trusses.

STEEL OR CONCRETE

The space frame is, of course, in its most useful form when used in roof structures. The lamella roof of the Lion and Unicorn Pavilion at Southbank and the triangulated pattern of the Dome of Discovery have become

Fig. 9. Office building for General Motors at Detroit. Right, cross section; above, section A-A.

very familiar. The steel or aluminium members could have been replaced by reinforced concrete or hardwood; or by a thin concrete skin, in which case the roof would have become a vault. Concrete vaults usually require less steel than steel skin structures, but it is possible, in long spans, for the reinforcing steel required to be heavier than the structural steel, due to the dead load of the concrete. Corrosion must be considered if a steel structure is chosen, but the saving in structural steel may be large enough to merit three-yearly maintenance.

FOLDED SLABS

Mr. Samuely stressed the fact that the barrel shape of concrete vaults is becoming somewhat monotonous and that the same effect can be achieved by the prismatic folded slab. Fig. 10 is adapted from a book by A. J. Ashdown* which is devoted to an explanation of the various types of prismatic structure. The calculation of approximate stresses in this type of vault is within the capacity of the average engineer; the shuttering is more simple and cheap; and some of the members can be precast.

We may certainly expect great progress in the field of stressed skin structure during this century, although star beams and space frames in a horizontal plane may not often be economical enough to allow their use during the present shortage of materials.

*The Design of Prismatic Structures. A. J. Ashdown. *Concrete Publications Ltd.

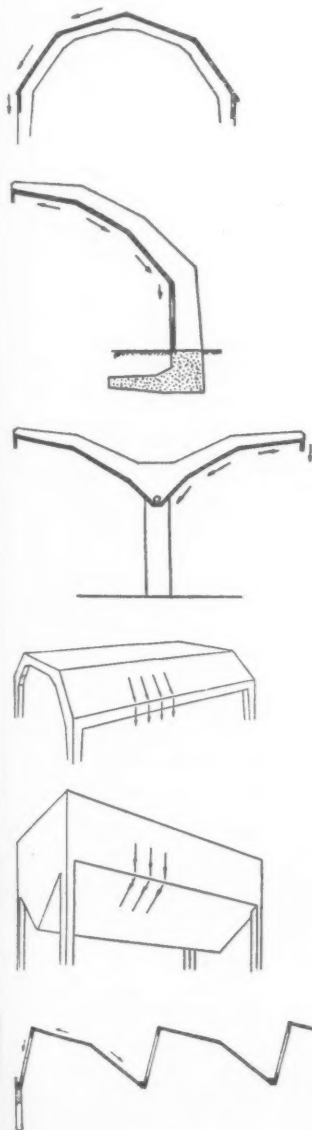


Fig. 10. Various types of prismatic folded slab structures.

RECENT INFORMATION CENTRE ITEMS ON THE THEORY AND DESIGN OF CONCRETE STRUCTURES

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| 20.12.51: 20.209 | Concrete structures at the 1951 Exhibition. |
| 13.12.51: 19.136 | Precast concrete framing. |
| 6.12.51: 18.91 | Composite construction. |
| 6.12.51: 18.92 | Prestressed concrete: ISE report. |
| 6.12.51: 18.93 | Prestressed concrete: fire resistance. |
| 6.12.51: 20.206 | Long-span concrete vaults. |

Readers requiring up-to-date information on building products and services may complete and post this form to *The Architects' Journal*, 9, 11 and 13, Queen Anne's Gate, S.W.1

ENQUIRY FORM

I am interested in the following advertisement appearing in this issue of "The Architects' Journal." (BLOCK LETTERS, and list in alphabetical order of manufacturers names please).

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Please ask manufacturers to send further particulars to:—

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*Above right: Cantén, Chrysler Motors Ltd., and Dodge Brothers (Britain) Ltd., Kew, Surrey.
Centre: Inver Court, Bishops Bridge Rd., W.2.
Below right: Nurses' Rest Room, Edgware General Hospital.*

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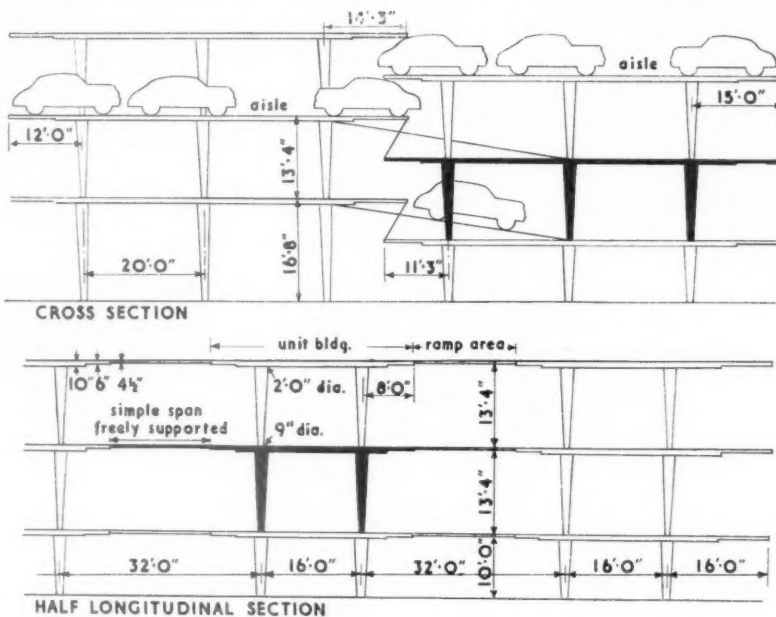
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Also manufacturers of Duresco, 'King of Water Paints', Silcolac Hard Gloss Enamel Paint, Silpaco Flat Oil Paint, etc. Please write for full particulars of these products, or of D.E.C.

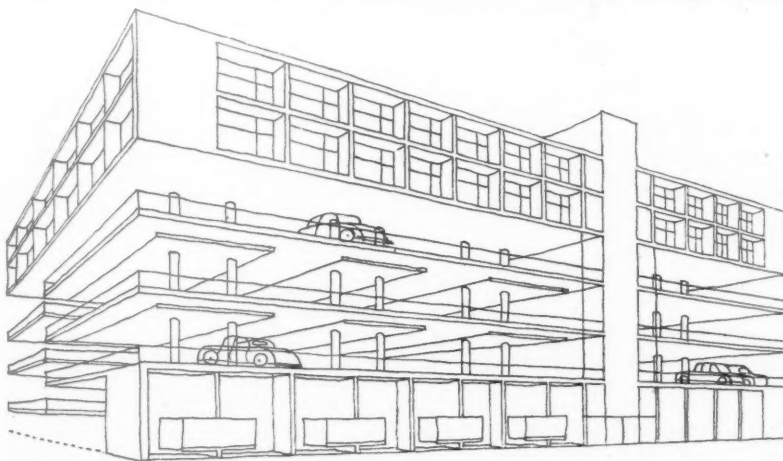
DURESCO PRODUCTS, CHARLTON, LONDON, S.E.7.



MULTI-STOREY GARAGE IN NEW ORLEANS



For economy, this garage in New Orleans was designed with open decks without enclosing walls, thus eliminating the need for mechanical ventilation. The floors and roof were designed as flat slabs. Hence there is a large bending moment and shear at the heads of the columns, which are 24-in. in diameter, but the use of hinged joints at the feet of the columns made it possible for them to taper down to 9 in. Thus the maximum amount of space has been left for the parking and manoeuvring of cars. Each unit of the building is 65 ft. by 32 ft., supported by six columns on a grid 20 ft. by 16 ft., with the slab cantilevering out on each side. On the 16-ft. grid the cantilever is 8 ft., and an 8-ft. suspended slab is simply supported between each unit of the building. The columns each have a core consisting of a 3½-in. diameter steel shaft to which is welded a 9-in. diameter by 1½-in. cap and a 9-in. diameter by 1-in. base. The column reinforcement is welded to these top and bottom plates. The average floor thickness is 7½ in. and the average weight of steel used was 5 lb. per sq. ft. of slab area. The blacked in portions of the sections above indicate one independent unit of the building. The drawing below suggests how a two-storey office building might be constructed over one of these garages. (Summarized from Architectural Record [USA] Sept. 1951.)



INFORMATION CENTRE

A digest of current information prepared by independent specialists; printed so that readers may cut out items for filing and paste them up in classified order.

19.144 construction: details

DOOR FRAMES

Metal Door Frames (Steel). BS 1245:1951. (British Standards Institution. 2s. 6d.)

Revision of 1945 BS. Range of external door frames increased and finishes now include stoving, galvanizing and metal spraying. Notes on fixing and painting.

This is a useful Standard for regular reference. Apart from details of sizes and types of frame, it contains brief notes on fixing and painting. An appendix shows how to order correctly, with the minimum of description—a point worth noting, as considerable confusion can arise when ordering windows only slightly different from others with similar numbers.

19.145 construction: details

CONCRETE FLOOR SLAB

Thin flat-slab floors span long bays. (Engineering News Record [USA]. October 25, 1951. p.36.)

Largest thin, flat-slab spans in American construction history in Los Angeles apartment building. Design methods interesting to architects and engineers.

The building is of irregular shape and involves random spacing of columns. The slabs were, therefore, analysed by the photo-reflective-stress-analyser method, to ensure an economic design compared with one derived from empirical rules. This method involves loading a mirrored model of the slab by air pressure and measuring deflections. Bending moment contours can be established and slab thickness and steel arranged accordingly.

The largest panel size is 21 ft. by 17 ft. It has a thickness of 5½ in. Internal columns are 16-in. square and have no dropped panels. Such a thin slab was made possible by using high-strength concrete, developed by the vacuum process, light-weight plaster partitions and the reduction of live load to only 29 lb. per sq. ft. The vacuum process helped to develop 4,000-lb. per sq. in. concrete at 28 days.

25.81 water supply and sanitation

DRAIN LAYING

Laying Drain Pipes. MOW Advisory Leaflet No. 24. (HMSO. 1951. 3d.)

Very brief and elementary notes for the craftsman. A point of interest is the recommendation against rendering the inside of manholes.



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Cathedral (in five textures of differing obscuration) Double Rolled; No. 2 Hammered; Glasgow Hammered; Mottled; Rough.

Figured Rolled Dewdrop; Festival; Flemish; Glistre; Montene; Stippolyte; Wavene, etc.

Flashed Opal White (the best diffusing medium).

Reeded (a family of glasses designed to harmonize with contemporary architecture: in three widths of fluting). Narrow, Broad, Major and Cross Reeded, Narrow and Broad Reedlyte (which gives greater obscuration than Reeded).

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THE INDUSTRY

From the industry this week Brian Grant reports on a generous offer by a firm of plasterboard manufacturers, a new edition of a useful booklet on floor construction and a fan-aided gas-fired space heater.

ENCOURAGING CRAFTSMEN

In these days when the craftsman's pay packet is only about 10 per cent. more than that of the unskilled labourer, it is by no means easy to persuade boys to bind themselves for five years at slowly increasing rates of pay when they can start at once earning quite good rates as labourers. Builders throughout the country are doing what they can to encourage boys to take a longer view, and a number of prizes is awarded each year in the various crafts. Manufacturers, too, are helping with prizes, the latest being the British Plaster Board Ltd., which is presenting twenty sets of plasterers' tools, two for each of the ten regions of the NFBTE. The same firm is also making plans for other aids to technical education and it is to be hoped that other materials' manufacturers will follow suit. Prizes, of course, go only to the few, but they do, at least, give boys the idea that the industry sets some store by its craftsmen.

As most readers probably know, British Plaster Board Ltd. manufactures gypsum plasters and plaster boards, and they have just introduced "Paramount" moulded cove, which consists of a core of gypsum plaster, moulded to cove section and encased in a strong paper liner. Since it is completely dry it can be decorated as soon as it is fixed. It is made in lengths of 10, 12 and 14 ft. and can be cut with a fine tooth saw. (British Plaster Board Ltd., Morris House, Jermyn Street, London, S.W.1.)

PRECAST FLOORS

Concrete Ltd. has just issued a revised edition of the "Bison" floor book, which was first published a little more than four years ago. "Bison" *in situ* floors have been omitted from this new edition since the firm now specializes in precast types, and, while the general information is unchanged, the various tables have been brought up to date and a good deal of other information added. Pre-

stressed floor beams have been produced by Concrete Ltd. since the autumn of 1948, and these are economical for spans up to about 27 ft. compared with about 18 ft. for beams reinforced with mild steel rods. There is an interesting table comparing the two methods of construction. This shows that, for equal spans and a super load of 60 lb., the ordinary beam floor is about 2 in. thicker than a floor with prestressed units.

The book contains also the LCC and Standard Code of Practice requirements for loadings and these are followed by several pages of data on standard weights of building materials. There are also notes on screeds, plasters, insulation and pattern staining, but most architects will probably be more interested in the 32 pages of constructional drawings (one of them is reproduced below) which show how these beam units can be used for many purposes other than for floors, notably for mansard or north light roofs and balcony seating, while the firm also makes cantilevered eaves units to give an overhang with flat roofs. For this purpose an extra wide beam unit is used. The part which cantilevers is hollow, to reduce weight.

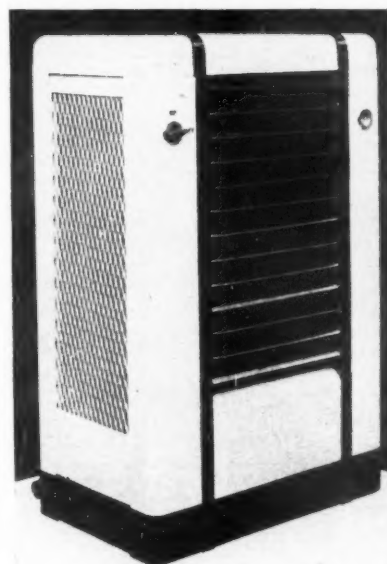
This is a useful publication which contains a large proportion of basic data as well as information about the publishers own products. (Concrete Ltd., London office, 16 Northumberland Avenue, W.C.2.)

HEATING WITH GAS

The illustration, right, shows a new type of gas-fired space heater which has been under development by W. Sugg & Co. for several years. It appeared that most of the flued convection heaters in use abroad had comparatively low efficiencies, from 60 to 65 per cent., and it was decided that the most promising line of development would be a gas heater in which the air movement was assisted by a small fan consuming a minimum of power.

A full range of these heaters is now in production. Known as "Halcyon" heaters, they have an output of about 15,000 B.Th.U. per hr. and can be used with or without a flue. The main heat exchanging surface consists of rectangular tubes and the fan is placed below the exchanger so that it cannot be damaged by residual heat when the gas is turned off. A very small fan is used to keep the warm air velocity low, thereby avoiding draughts, and this type of circulation has been described as "assisted convection" to distinguish it from the type provided by high velocity fans.

There are safety devices which allow the main gas valve to open only when the pilot flame is alight, while failure of the air circulation also cuts off the gas. It is possible to interconnect the gas and the electricity supply to the fan so that the latter will start up a few minutes after the gas is lighted, and stop after the gas is turned off. This makes for simplicity if time switches or thermostats are used, and it also makes it



Sugg gas-fired "Halcyon" space heater.

impossible for cold air to be circulated immediately after starting.

Under test these heaters have shown an average efficiency of just under 80 per cent. Illustrated here is the model "J," which measures 26 in. high by 17½ in. wide, with a depth of 14½ in. Gas consumption is 30 cu. ft. per hr. and electricity, only 25 watts. The heat output is 12,000 B.Th.U. Industrial types are also produced, and these can be arranged in multiple banks to simplify the automatic controls. Models for building-in are also produced. (William Sugg & Co. Ltd., Ranelagh Works, Chapter Street, Westminster, London, S.W.1.)

BRIAN GRANT

INFORMATION CENTRE
INDEX FOR 1951

An alphabetical index covering Information Centre items and special articles published in the Technical Section during the twelve months ended December 31, 1951, is being prepared. Readers who wish to have a copy—it is free of charge—should complete the form below and post it to the Technical Editor, THE ARCHITECTS' JOURNAL, not later than March 13, 1952.

Please send me the Information Centre Index for 1951:

Name
(Block letters)

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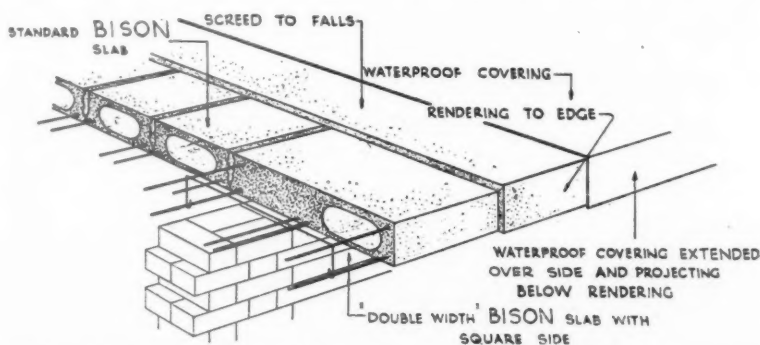


Illustration from the revised edition of the Concrete Ltd. booklet on floors, showing use of special "Bison" units for overhanging eaves.

Announcements

Messrs. David E. Morrison, B.A.(HONS.), A.R.I.B.A., and L. Melville Rose, L.M.I.A.S., A.F.S.(ENG.), Chartered Architects and Surveyors, have acquired larger premises. Their practice will continue at 8, Park Street, W.I.

Messrs. A. H. Davis & Partner, chartered quantity surveyors of Newburn Chambers, 107, New Bridge Street, Newcastle-upon-Tyne, have opened a branch office at 32A, Silver Street, Durham (Tel.: Durham 1623) and would be pleased to receive trade catalogues.

Mr. T. C. Garland, F.I.A.A.S., M.INST.R.A., of Messrs. Garland and Place, Architects, Surveyors, 4, Derigate, Northampton, wishes to announce that the new address of the firm is now 53-55 Gold Street, Northampton. Tel.: Northampton 3249 remains unchanged.

Mr. F. C. Thompson, F.R.I.C.S. and Mr. E. W. Leaning, F.R.I.C.S., practising as John Leaning & Sons, chartered quantity surveyors at 28, John Street, Bedford Row, W.C.1, have taken into partnership Mr. E. C. Price, A.R.I.C.S., Mr. H. Leaning, A.R.I.C.S. and Mr. H. Senior, A.R.I.C.S., all of whom have been senior assistants with the firm for many years. The title of the firm remains unchanged.

Warerite Ltd. announces that its Northern Sales Office has now moved to larger premises at The Royal Exchange, Manchester, 2. (Tel. Blackfriars 5174-7.)

Porn and Dunwoody Ltd. announce that they have formed a separate company to deal with their lift business. The new company will be known as Porn and Dunwoody

(Lifts) Ltd. and will operate from the firm's Southwark Works which were recently modernized and enlarged. The telephone number is Waterloo 7107 (4 lines).

The Carter Group of Companies announce the opening of a new branch of Carter & Co. London Ltd., at 31/32 Dean Street, Manchester 1. The new branch will carry out contracts for glazed and floor tiling and faience in the North Midlands district. Mr. J. H. Crabtree continues to act as the Company's agent in the area.

The Indestructible Paint Company Limited announces the appointment of Dr. James Eric Arnold, B.Sc., Ph.D.(Londn.), F.R.I.C., A.Inst.P., as a director of the firm. Dr. Arnold, who has held the position of Technical Director to the Indestructible Group since 1950, has been associated with the paint industry for many years. He was previously in the service of Titanine Ltd.

Cellon Ltd., the manufacturers of "Cellux" paints, announce the appointment of Mr. W. F. Wilson to their board of directors. Mr. Wilson has been with the company for more than 25 years, during which he has held the position of Chief Chemist (1929-1943), Manager of Technical Development Department (1943-1950), and Technical Manager (from 1950). He is continuing in this latter capacity in addition to his new duties. From the same date, Mr. F. J. Smith, who joined the company in 1921 and has for many years been in charge of the Accounts Department, is appointed Assistant Secretary.

Mr. T. A. M. Roberts, sales director of the Metals Division of Imperial Chemical Industries Ltd., died suddenly on February 3 at the age of 51. Mr. Roberts became

Metals Sales Manager in 1937 and was appointed to the Division Board in 1945. At the time of his death he was Chairman of the Brass and Copper Tube Association and the Extruded Brass and Copper Alloys Association, and had held executive and advisory offices in the Cold Rolled Brass and Copper Association, the High Conductivity Copper Association and the Brass Wire Association. He was a prominent member of the executive committee of the British Non-Ferrous Metals Federation. The non-ferrous metals industry, and the wide circle of friends he made in the industry, will feel his loss deeply.

"Stotts of Oldham," the manufacturers of large-scale catering equipment, have recently opened a new depot at 14 John Street, Bristol. (Tel.: Bristol 24908.) Under the management of Mr. A. W. Teall, who has been with Stotts since 1925, the new depot will provide closer supervision and improved consultation and service in the West Country, from Portsmouth and the Isle of Wight westward, and South Wales.

Marryat & Scott Ltd., lift manufacturers, of Wellington Works, Hounslow, announce the appointment of two new Directors, Mr. R. Walker and Mr. B. P. Hutton. Mr. Walker has been Secretary of Marryat & Scott Ltd. since 1928 and is also Secretary of the recently formed public company, Marryat & Scott Holdings Ltd. Mr. Hutton joined the company in 1937 and since then has been connected with sales and advertising in London and Birmingham. He has been Sales Manager since 1945.

Poulton and Freeman, Chartered Architects, announce that their office has been moved to 6a Wyndham Place, Bryanston Square, London, W.1. (Tel.: Ambassador 2211-2.)

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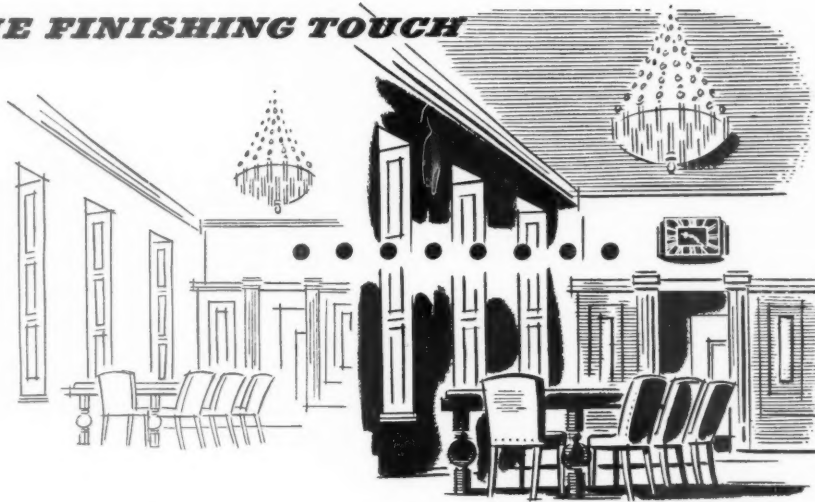
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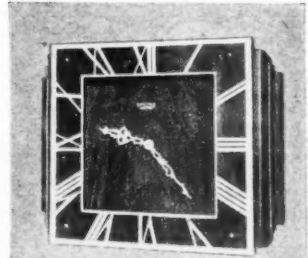
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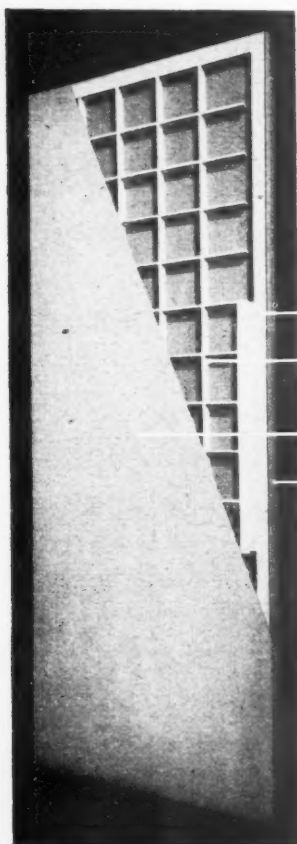
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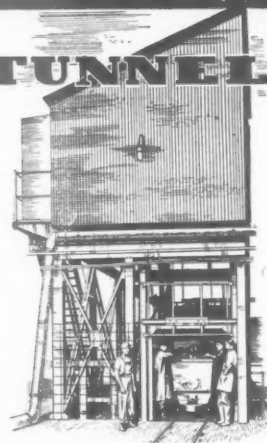
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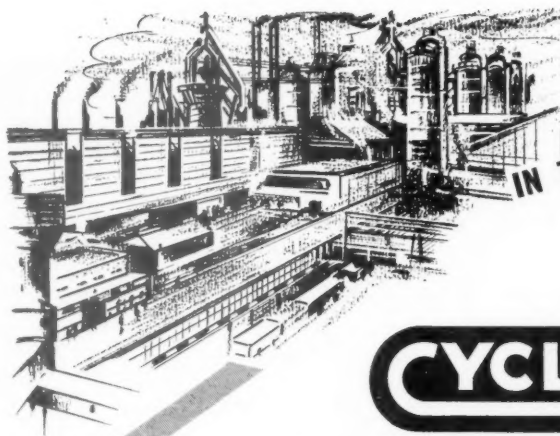


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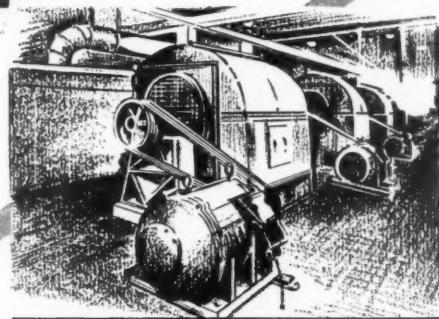
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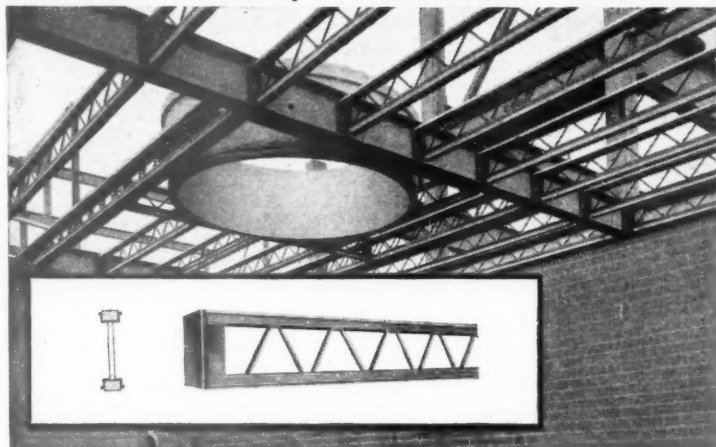


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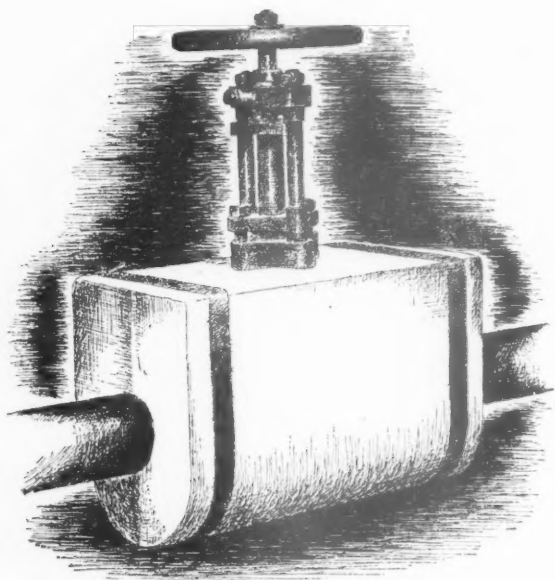


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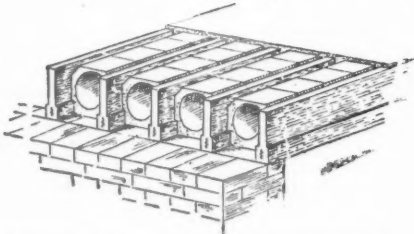
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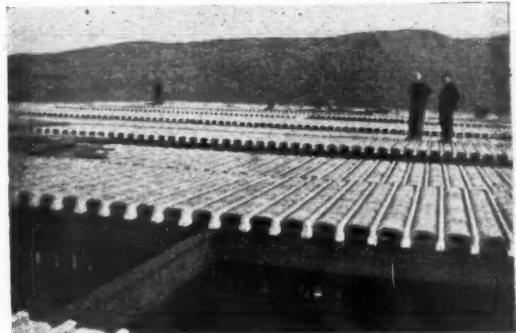
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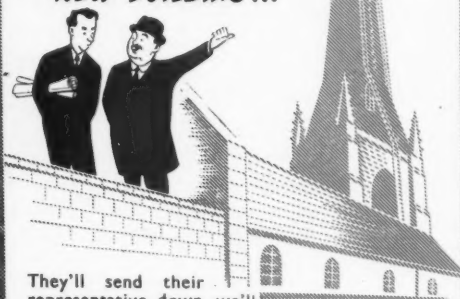


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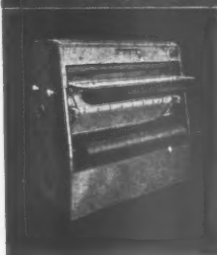
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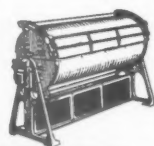
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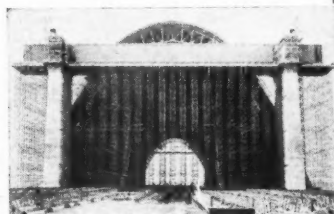
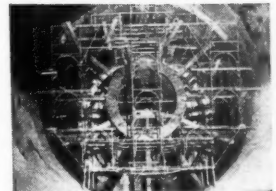
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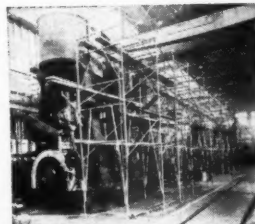
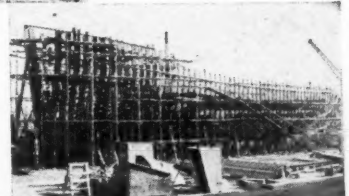
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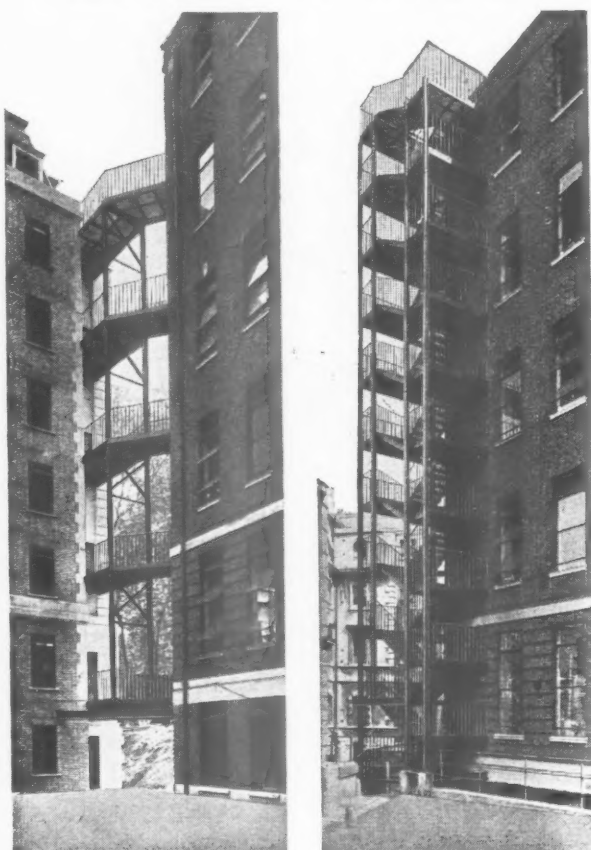
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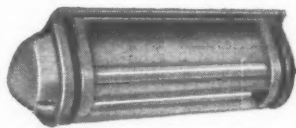
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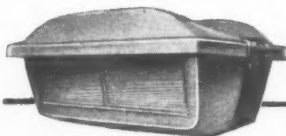
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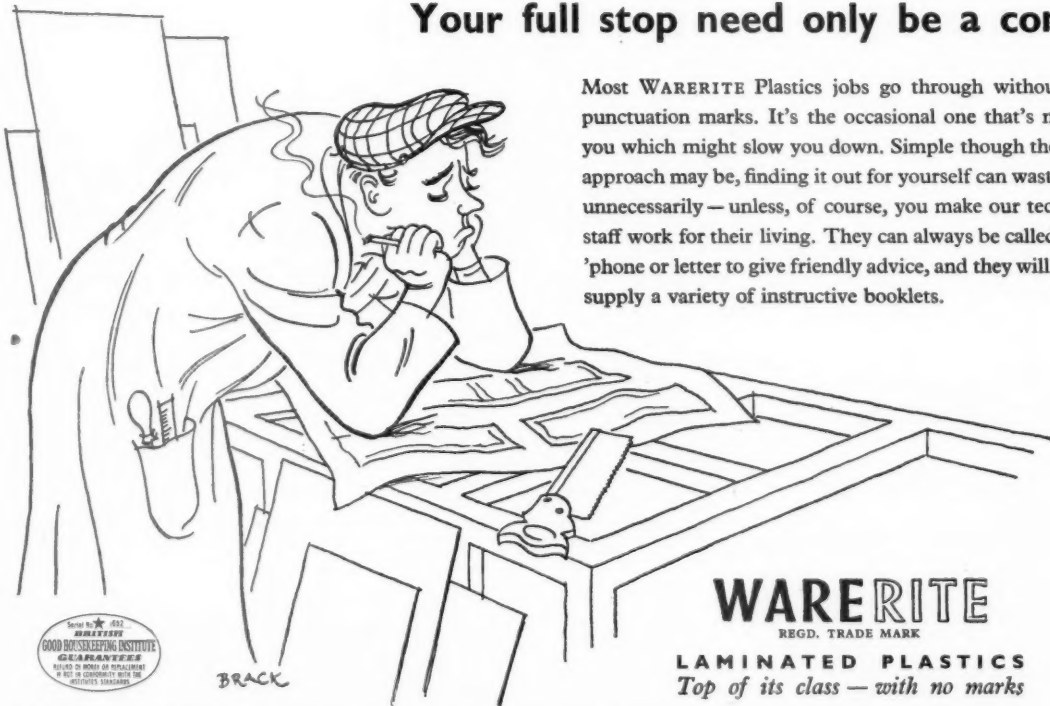
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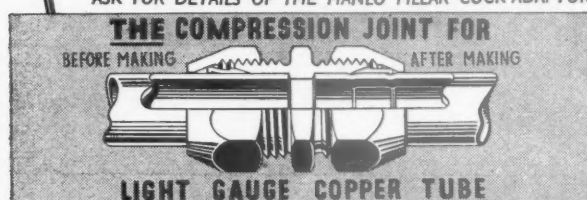
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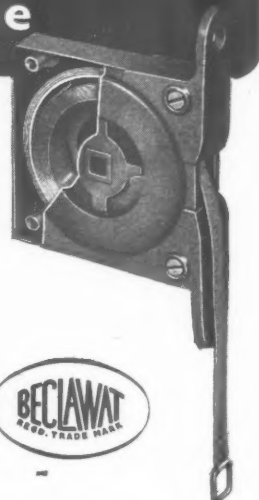
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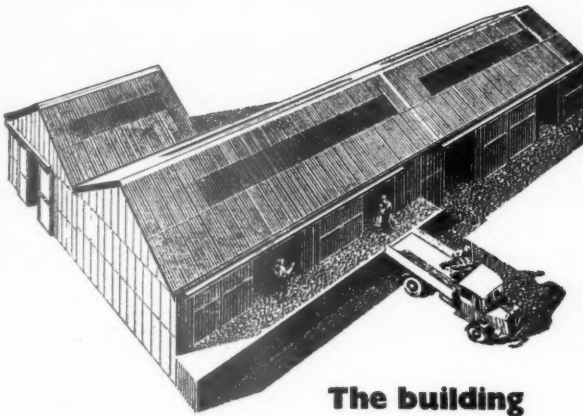


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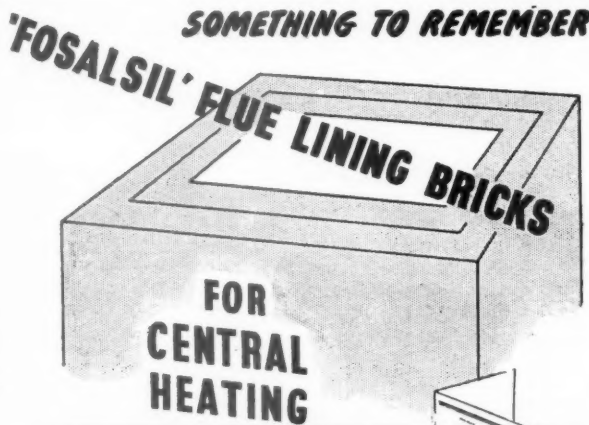
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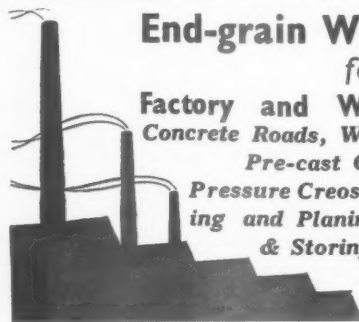
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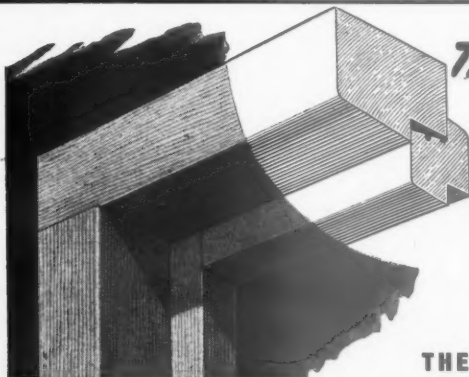
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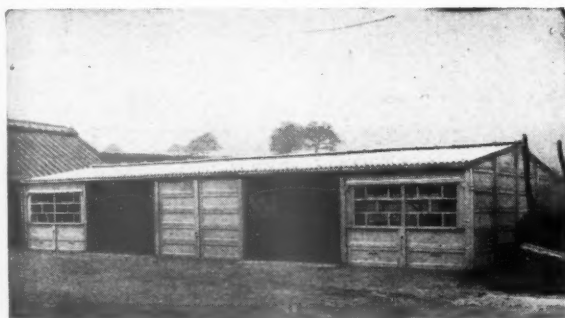
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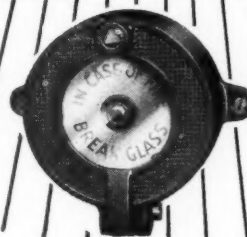
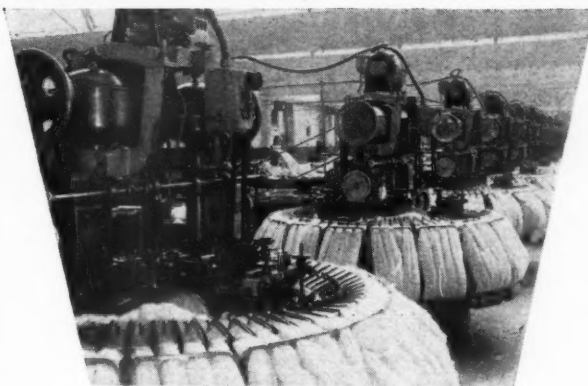
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Housing accommodation will be made available if necessary.

The appointment, which is terminable by one month's notice, will be subject to the National Scheme of Conditions of Service for Local Government Officers to the Local Government Superannuation Act, 1937, and medical examination.

Applications, stating age, qualifications, present and past positions and experience, together with the names of two persons to whom reference can be made, should be sent to Mr. Trevor J. Livesey, M.C., A.M.I.Inst.C.E., A.M.I.Struct.E., A.M.I.Mun.E., Borough Engineer and Surveyor, Guildhall, Grantham, to arrive not later than 10 a.m. on Monday, 17th March, 1952.

JOHN F. GUILLE, Town Clerk.

Guildhall, Grantham. 6440

HARROW URBAN DISTRICT COUNCIL.

ENGINEER SURVEYOR'S DEPARTMENT. Applications are invited for the undermentioned appointments in the Department of the Engineer and Surveyor:—

(1) **ARCHITECTURAL ASSISTANT.** A.P.T., Grades V/VA/VI (£570-£710 per annum, plus London "weighting").

Applicants must have had sound technical experience in all building trade subjects, be competent draughtsmen, experienced in the preparation of specifications and tender documents and in the supervision of repairs, alterations and decorations in connection with schools and other municipal buildings.

(2) **ARCHITECTURAL ASSISTANT.** A.P.T., Grades I/II/III (£440-£545 per annum, plus London "weighting"). Starting salary according to age and experience.

The Council is unable to assist in obtaining housing accommodation for successful candidates.

The appointments will be subject to the provisions of the Local Government Superannuation Act, 1937 to the passing of a medical examination and to the National Joint Council's Scheme of Conditions of Service.

Canvassing will be a disqualification. Forms of application may be obtained from the undersigned, to whom they should be returned not later than Friday, 14th March, 1952.

H. WELLS,

Clerk of the Council.

Council Offices, Harrow Weald Lodge, Harrow, Middlesex. 6429

BRITISH ELECTRICITY AUTHORITY.

MIDLANDS DIVISION.

SENIOR DRAUGHTSMAN (Architectural) required in Chief Generation Engineer's (Construction) Department at Wolverhampton. National Joint Board service conditions, superannuable appointment. Salary within Schedule D, Grade V, £547 to £651 per annum.

Applicants should have had wide experience in the preparation of working drawings relating to power stations and other buildings. The possession of an engineering degree or recognised qualification will be considered an advantage.

Forms of application available from Establishments Officer, 53, Wake Green Road, Moseley, Birmingham, 13, to be returned by 22nd March, 1952.

F. W. LAWTON, Divisional Controller. 6460

LONDON COUNTY COUNCIL.

ARCHITECTS AND SURVEYORS required for building control work. Salaries up to £696, according to experience. R.I.B.A. or A.R.I.C.S. essential. Appointment forms from Architect, County Hall, S.E.1, quoting AB/EK/BB/3. (210) 6463

HER MAJESTY'S COLONIAL SERVICE—

TOWN PLANNING OFFICERS.

The following vacancies exist for **TOWN PLANNING OFFICERS**:—

NIGERIA (27281/7). Two Town Planning Officers. Appointments will be either on probation for permanent and pensionable employment at a salary within the scale £720 to £1,300 or on contract at a flat-rate salary within the scale £800 to £1,450 per annum, point of entry in each case depending on war service and professional experience. In addition a temporary non-pensionable cost-of-living allowance of £102 to £165 per annum is payable. An outfit allowance of £50 is paid on first appointment on salaries under £970. Partly furnished Government quarters are provided, if available, at a low rental, and income tax is payable at low West African rates only. Candidates must be Associate Members of the Town Planning Institute, and should have had experience in the Town Planning branch of a Municipal or other local authority in the design and execution of Town Planning Schemes. Preference will be shown to candidates possessing, in addition, professional engineering qualifications. Tours of duty last from 18-24 months. Terms of service include free first-class passages for the officer and, if married, for his wife, once each way each tour, free medical attention, and home leave on full pay at the rate of seven days per month of resident service.

MALAYA (27281/12). Assistant Town Planner in the Town Planning Department, Malaya, in the salary scale £742 to £1,652 per annum, the point of entry being determined by war service and approved experience. A cost-of-living allowance varying from £336 per annum for a bachelor, to £707 per annum for a married man, is also payable. Appointment is on three years' probation for pensionable employment. Free passages are provided once each way each tour for the officer, his wife and up to three children under the age of 10. Quarters, if available, are provided at a low rent. Leave is granted at the rate of four days for each month of resident service in a tour of 3-4 years. Candidates, between the ages of 28 and 35, must be A.M.T.P.I. preferably with other professional qualifications and with a good knowledge of recent Town Planning Legislation.

JAMAICA (27281/31). Assistant Town Planner. Permanent and pensionable appointment in the salary scale £945 to £1,045. Maximum of scale may be paid to suitably qualified and experienced candidate. Housing allowance of 10 per cent. of salary (maximum £100) to male married officers. Free first-class passages on appointment for officer and wife and children up to total of 5 in all; free first-class return passages on leave once in every 3 years for officer only. Candidates, who should be between 25 and 45 years old, should be Corporate Members of the Town Planning Institute and of the Royal Institute of British Architects. They should have a sound knowledge of Town Planning Legislation and of the preparation and administration of Town Planning Schemes.

Intending candidates should apply in writing to the Director of Recruitment (Colonial Service), Colonial Office, Sanctuary Buildings, Great Smith Street, S.W.1, giving brief details of their age, qualifications and experience. They should mention this paper and quote the reference number shown against the post for which application is made. 6462

NEWCASTLE REGIONAL HOSPITAL BOARD.

ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of a **GENERAL ARCHITECTURAL ASSISTANT** (Grade A.P.T. III, £450 to £495 per annum), on the permanent Headquarters Staff of the Board's Architect in Newcastle. It is expected that the salary scales of the Architectural staff of Regional Hospital Boards will shortly be regraded on an improved National basis.

The appointment relates to the section of the staff which is concerned with practical architectural work throughout the Region. To Architectural Assistants who wish to gain experience of hospital practice the post offers an excellent opportunity for doing good-class work full of interest and variety in a developing service.

Applicants must produce evidence of having had a sound architectural training, and should have passed or reached the standard of the Intermediate Examination of the Royal Institute of British Architects. Some practical experience in an architect's office is essential.

Evening study facilities are available at the University of Durham, King's College, Newcastle-on-Tyne.

The appointment will be subject to the provisions of the National Health Service (Superannuation) Regulations, 1947. Successful candidates will be required to pass a medical examination.

Applicants should state: (1) Name and full address; (2) age and whether married; (3) professional qualifications; (4) experience; (5) present appointment and salary; (6) war service; (7) date available if appointed, and (8) names and addresses of three referees.

Applications are to be received by the undersigned not later than the 21st March, 1952.

E. B. JENKINS, Secretary.

"Dunira," Osborne Road, Newcastle-on-Tyne, 2. 26th February, 1952. 6470

DENBIGHSHIRE COUNTY COUNCIL.

COUNTY PLANNING DEPARTMENT.

The above Council invite applications from suitably qualified persons for the following appointments to the Staff of the County Planning Department:—

(a) **CHIEF TECHNICAL ADMINISTRATIVE ASSISTANT** for the County Headquarters Office at Ruthin. Salary A.P.T., Grade IX, £790 to £910 per annum. Applicants must have had considerable experience in the control of development and general planning administration and be Corporate Members of the Town Planning Institute. An additional recognised qualification in either architecture, engineering or surveying will be deemed to be an advantage.

(b) **SENIOR COUNTY PLANNING ASSISTANT** for the County Headquarters Office at Ruthin. Salary, A.P.T., Grade VII, £685 to £760 per annum. Applicants must be competent to undertake the preparation of Development Plan proposals for urban, rural and coastal areas, schemes for the redevelopment of built-up areas, and be Corporate Members of the Town Planning Institute.

(c) **SENIOR COUNTY PLANNING ASSISTANT** for the County Headquarters Office at Ruthin, and

(d) **SENIOR COUNTY PLANNING ASSISTANT** for the East Area Office at Wrexham.

Salary for each of the above-mentioned appointments, A.P.T., Grade VI, £545 to £710 per annum. Applicants must have had a good general experience in statutory planning and be Associate Members of the Town Planning Institute or hold a recognised qualification in architecture, engineering or surveying.

(e) **COUNTY PLANNING ASSISTANT (DEVELOPMENT CONTROL)** for the East Area Office at Wrexham. Salary, A.P.T., Grade IV, £530 to £575 per annum. Applicants must be competent to assist in the control of development, the preparation of reports, and should have passed the Intermediate Examination of the Town Planning Institute.

(f) **SURVEYOR AND DRAUGHTSMAN** for the County Headquarters Office at Ruthin. Salary, A.P.T., Grade II, £470 to £515 per annum. Applicants must be expert Surveyors and Draughtsmen. Previous experience in Ordnance Survey work is essential, and ability to prepare perspective drawings and sketches will be deemed to be an advantage.

(g) **DRAUGHTSMAN** for the East Area Office at Wrexham. Salary, A.P.T., Grade I, £440 to £485 per annum. Applicants must be expert draughtsmen and colourists, and be able to undertake the preparation of architectural drawings. The appointments will be subject to the terms and conditions of service applying to the administrative, technical and clerical officers of the County Council, and will be terminable at the end of any month by one month's notice in writing on either side. The successful applicants will be required to pass a medical examination, and will be subject to the Local Government Superannuation Act, 1937. Applicants must indicate the appointment applied for, and may state whether they wish to be considered for more than one appointment. Applications, stating age, whether married or single, qualifications, present position and salary, previous positions, and full details of experience obtained, together with a copy of one recent testimonial and the names of two persons to whom reference may be made, must be sent to the undersigned by not later than the 22nd day of March, 1952.

W. E. BUFTON,

Clerk of the County Council.

County Offices, Ruthin. 6456

ROTHWELL URBAN DISTRICT COUNCIL.

(FOR 35).

APPOINTMENT OF (1) QUANTITY SURVEYOR; (2) ARCHITECTURAL ASSISTANT. Applications are invited for the following appointments, at salaries in accordance with Grade IV (£530-£515-£575 p.a.):—

(1) **QUANTITY SURVEYOR.** Candidates should be capable of undertaking all stages of work in the preparation of Bills of Quantities, preparation and statement of final accounts, site measurements and interim certificates.

(2) **ARCHITECTURAL ASSISTANT.** Preference will be given to applicants who have had practical experience in housing and general architectural work, and who are at present studying for the qualifying examinations of the R.I.B.A.

Applications, stating age and experience, and together with copies of not more than three recent testimonials, to reach the undersigned not later than Monday, 24th March, 1952.

ALLEN T. S. ROBERTSON,

Clerk of the Council. 6439

Civic Buildings, Rothwell, Leeds.

SCOTTISH SPECIAL HOUSING ASSOCIATION, LTD.

invite applications for the appointment of Architect, Grade II. Salary scale, £490-£725, with placing for age and experience. The post is superannuable under the Local Government Superannuation (Scotland) Act, 1937. Forms of application with full particulars can be obtained from the Secretary, 15/21, Palmerston Place, Edinburgh, 12. Completed forms of application must be lodged within 10 days of the appearance of this advertisement. 6453

UNIVERSITY COLLEGE OF HULL.

Applications are invited for the appointment of **CLERK OF WORKS** to superintend the erection and minor works carried out during the period of the main contract. Particulars from the Registrar to whom application to be made not later than 31st March, 1952. 6472

SALOP COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.
CHIEF ASSISTANT ARCHITECTS, A.P.T. X
(£870-£1,000).
(i) Education Branch.
(ii) General Branch.

Candidates should have a sound architectural training, possessing a minimum qualification of A.R.I.B.A., and preferably experience of contemporary design and construction.

Chief Assistant Architects will work under the personal direction of the County Architect and be responsible for the preparation of sketch plans, working drawings, supervision of staff and works in progress, in the case of (i) for schools and technical colleges, and (ii) buildings for Standing Joint, Fire Brigade, Health, Welfare and Children's Committees.

A candidate with a special flair for design may be selected to deal especially with the initial design of all types of county buildings.

An expenses allowance of not exceeding 30s. a week will be paid to married officers taking up these appointments, together with third-class return railway fare once a month to visit their families, such allowances to be limited to a period of six months or until such time as the officer is able to obtain accommodation for himself and his family in Shropshire, whichever is the earlier.

Application forms and conditions of service can be obtained from C. H. Simmons A.R.I.B.A., Dip.T.P., County Architect, Column House, London Road, Shrewsbury, to whom they must be returned not later than 22nd March, 1952.

G. C. GODBER,

Clerk of the County Council.

Shrewsbury.

27th February, 1952.

6461

SURREY COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.
Applications are invited for the following appointment:—

ASSISTANT MAINTENANCE SURVEYOR.
Grade VI, at a commencing salary of £645 per annum, rising by annual increments of £20/£25 to a maximum of £710 per annum, plus London allowance of £30 per annum.

Applicants should possess approved qualifications and experience, and preference will be given to those who are Members of the Royal Institution of Chartered Surveyors (Building Sub-Division).

They should be capable of drafting specifications in all trades, preparing schedules of dilapidations, the preparation of detailed estimates for general maintenance works, and surveys of properties.

Full details of past and present appointments should be given.

The appointment will be subject to the provision of the Local Government Act, 1937, and the successful applicant will be required to pass a medical examination.

Applications, stating age, qualifications and experience, and accompanied by copies of three recent testimonials, should be sent to the County Architect, Surrey County Council, County Hall, Kingston-upon-Thames, not later than 22nd March, 1952.

Canvassing, either directly or indirectly, will disqualify a candidate from consideration. The Council will be unable to provide any housing accommodation, and the successful applicant will be expected to make his own arrangements in this direction.

T. W. W. GOODERIDGE,

Clerk of the Council.
County Hall, Kingston-upon-Thames. 6471

HAYES AND HARLINGTON URBAN DISTRICT COUNCIL.

SENIOR ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment in the Department of the Engineer and Surveyor, at a salary in accordance with A.P.T. Grade V, of the Scales of Salaries, i.e., £570, rising to £620 per annum, less London weighting, at present amounting to £30 per annum at 26 years of age and over.

Preference will be given to applicants who have passed the Intermediate Examination of the R.I.B.A.

Forms of Application may be obtained upon receipt of a stamped addressed envelope, from the Engineer and Surveyor, Town Hall, Hayes, Middlesex, to whom completed applications must be returned by 9 a.m. on Wednesday, 19th March, 1952.

A. E. HIGGINS,

Clerk of the Council.

6475

BOROUGH OF ILFORD.
APPOINTMENT OF ARCHITECTURAL ASSISTANT, GRADE VI.

Applications are invited for the position of Architectural Assistant on the permanent staff of the Borough Engineer's Department. Salary in accordance with A.P.T. Grade VI, viz., £645 × £20(2) × £25—£710 p.a. plus London Weighting.

Candidates should be Associate Members of the R.I.B.A., have a thorough knowledge of architectural works with practical experience in the design and development of public buildings of all types, flats, housing schemes, etc., the preparation of specifications and be capable of supervising and controlling contracts.

The Council is prepared to consider, if necessary, in connection with this appointment, the question of housing accommodation comprising a two-bedroom self-contained flat in the vicinity of the Town Hall.

The appointment is a whole-time one (private practice being prohibited), is subject to one month's notice on either side, to the provisions of the Local Government Superannuation Acts,

the National Scheme of Conditions of Service and to medical examination.

Forms of application may be obtained from the Town Clerk, Town Hall, Ilford, and should be returned by the 17th March, 1952.

6469

Architectural Appointments Vacant

4 lines or under, 7s. 6d.; each additional line, 2s.

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

A FAMOUS Mutual Life Assurance House needs a few men of drive and integrity to act as AGENTS. Architects and Surveyors have the right contacts, and can best serve their "Mutual" interests. Further details from Box 4466.

QUALIFIED R.I.B.A. and Registered ASSISTANT ARCHITECTS required by the British Railways (London Midland Region) for service in the Architect's office, Euston. Applicants must be competent to control the activities of small groups of Architects engaged on a wide variety of projects and to supervise contract work. Salary £650 to £700. Certain residential and free travelling facilities available. Apply: Civil Engineer, British Railways, London Midland Region, Euston Grove, N.W.1. 6449

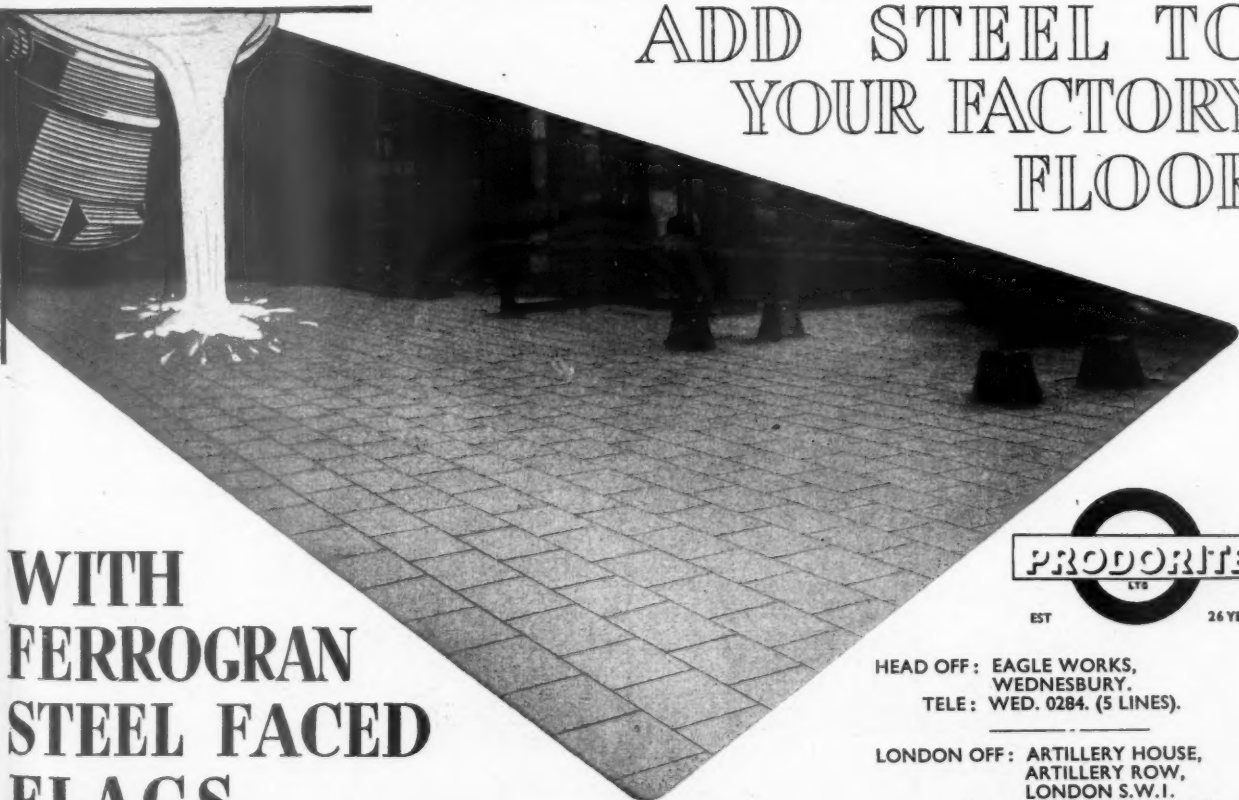
ARCHITECTURAL ASSISTANT required in London office, about R.I.B.A. Final. Office experience essential. Salary according to experience. G. H. N. Inman & H. A. J. Darlow, F./A.R.I.B.A., The Charterhouse, E.C.1. (CLE. 4414.) 6456(b)

ARCHITECT, with good knowledge of Quantities, required as CHIEF ASSISTANT. Partnership prospects. Reply with full details, giving age, qualifications and experience, to Box 6464.

EAST AFRICA.—ARCHITECTURAL ASSISTANTS of Intermediate and Final R.I.B.A. standard required for interesting work. Free housing. Salary according to experience and ability. Airmail full particulars to H. G. Radford, A.R.I.B.A., & Partners, P.O. Box 1500, Kampala, Uganda. 6473

MANAGER, to take charge of Branch Office, Southern Rhodesia. Salary and commission give four figure remuneration. A.R.I.B.A. or equivalent, preferably single. Brief personal and professional details to Overseas Technical Service, 5, Welldon Crescent, Harrow, quoting reference OSS.47/2. 6476

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LONDON OFF: ARTILLERY HOUSE,
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LONDON S.W.1.
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Architectural Appointments Wanted

POSITION required in Architect's office in North London by young man, aged 20 years. Completed National Service, and with 4 years' useful experience in an Architect's office prior to National Service. Studying for R.I.B.A. examinations. Salary required, £5 per week. Please reply to Box 395.

EXPERIENCED Chartered Structural Engineer and Surveyor seeks appointment with Architect. Architectural and engineering work, surveys, contract management. Can introduce business. Box 6354.

KEEN ASSISTANT, conscientious worker, with several years' experience, including L.A. housing, wishing to extend experience, seeks appointment with Architect of contemporary outlook. Appreciative of enthusiasm and hard work. Willing to travel anywhere, and accept responsibility. Single. References available. Please reply Box 400.

YOUNG MAN (26), 5 years' A.A. school just completed, seeks office and practical experience, London area. Salary required depends on how much he can learn. Box 403.

ASSISTANT, age 22, with 3 years' office experience, seeks position in London architect's office. Box 404.

ARCHITECTURAL ASSISTANT (25), also studied for Inter. Quantities R.I.C.S. and with 6 years' office experience of varied nature, seeks post in Surrey or W. Kent. Has own transport. Box 6474.

Other Appointments Vacant

4 lines or under, 7s. 6d.; each additional line, 2s.

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

APPLICATIONS are invited by Gas Chambers & Coke Ovens, Ltd., for the positions scheduled herewith. All posts are pensionable and offer good prospects to ambitious men. A five-day week of 38 hours is in operation. Applicants should state age and give brief particulars of experience. All applications will be treated in strict confidence. Assistance will be given to successful applicants to obtain suitable housing accommodation.

(a) **SENIOR REFRACTORY BRICKWORK DESIGNERS**, experienced in design of Inter-mittent Chambers and/or Coke Ovens. Salary: from £600, according to ability and experience.

(b) **JUNIOR DRAUGHTSMEN**, as above. Accustomed to detailing Refractory Brickwork. Salary: from £350, according to experience. Applications should be addressed to the Secretary, Gas Chambers & Coke Ovens, Ltd., Chandos House, Buckingham Gate, Westminster, London, S.W.1. 6447

A leading firm of Timber Building Manufacturers in the Home Counties require a **DESIGNER DRAUGHTSMAN** to specialise on new developments. Candidates should have had experience in the design of prefabricated timber structures of all types preferably both permanent and temporary for home and for export. The appointment offers splendid experience and opportunity for a keen imaginative and practical technician with sound drawing office experience. Please reply, in confidence, giving age, education, full details of career and present salary to Box 6400.

Partnership

9 lines or under, 12s. 6d.; each additional line, 2s.

A R.I.B.A. (33), general experience, including Local Authority Housing, Agricultural and Factory work, seeks appointment, leading to Partnership in a small progressive firm, preferably in Lincolnshire or East Midlands area. Box 6458.

Services Offered

4 lines or under, 7s. 6d.; each additional line, 2s.

ARTIST, prepared to quickly execute Perspective Drawings, in any medium, from Architect's own details, sketches or instructions. Box 6426.

PERSPECTIVES

MYERSCOUGH-WALKER requires free lance colleague (male or female), situate in London, for work on Perspectives, including meetings with Architects, Setting-Up and Site Visits. Write: Newfarm, Chilgrove, Chichester. 6468

DUPICATING AND TYPE WRITING. Specialists in reproduction of Specs., B.O.'s, etc. Prompt service. Work collected and delivered. Send for price list. Carr's Typing Bureau, 58, Waverley Road, S.E.25. ADD. 7078. 6466

CHARTERED QUANTITY SURVEYORS, with own office, offer their services to the profession in preparing Bills of Quantities and Final Accounts. Box 6467.

F. R.I.B.A., practising in London, offers part-time assistance to another Architect, Hospitals, Factories and Welfare, Schools, Domestic, and War Damage claims. Box 6459.

BUILDING SURVEYOR (age 42) desires position. Cornwall-Devon districts. Specifications, Quantities, Accounts, Surveys, Reports, Office Routine, Supervision, Estimates, Estate and Property Sales, etc. Accommodation asset. Box 6456(a).

For Sale or Wanted

4 lines or under, 7s. 6d.; each additional line, 2s.

MODERN Architecture in Great Britain is the subject of "Architecture D'Aujourd'hui No. 39," price 18s. 6d. Subscription is £5 ss. per year (6 issues). See below. 6388

MODERN Furniture at the Triennale is the subject of recent issues of "Domus"; 10s. 6d. each, or £5 15s. per year (12 issues), or £2 17s. 6d. for 6 months. Sole agents, Alec Tiranti, Ltd., 72, Charlotte Street, London, W.1. architectural booksellers since 1895. List of Continental magazines free. 6389

STUDENT would appreciate cuttings, photographs, etc., of pre-war, post-war designs of Golf Clubhouses—English, Continental—to prepare Thesis. A. C. Jones, 164, West Avenue, Exeter, Devon. 6477

Miscellaneous

4 lines or under, 7s. 6d.; each additional line, 2s.

A. J. BINNS, LTD., Specialists in the supply and fixing of all types of Fencing, Gates and Cloakroom Equipment. Harvest Works, 96/107, St. Paul's Road, N.1. Canonbury 2061.

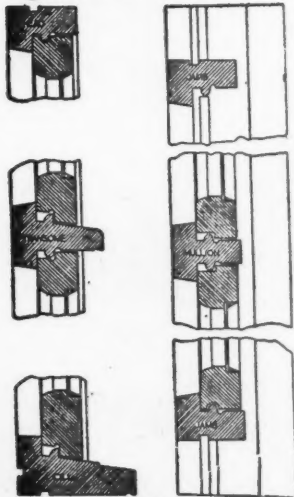
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The insidious workings of the Death Watch beetle are often not apparent until serious damage has been done. Only the scientific use of a penetrating and persistent insecticide will eradicate these borers. "WYKAMOL" polychlorophthalene can be confidently recommended and the experience and technical skill of our staff is at your disposal.

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ARTISTS' HOUSE EXHIBITION.—From Peri, Manette Street (Charing Cross Road), 11-6 daily, incl. Sat., until 4th April. 6452

LEADING London Firm of Building Contractors, who erected and sold large numbers of houses pre-war, are intensifying their house building activities on a considerable scale. They would welcome enquiries from Local Authorities desirous of accelerating satisfaction of their housing requirements. Replies to Beddington, Hughes & Hobart, 21, Devonshire Street, London, W.1. 6465

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R. I.B.A. and T.P.I. EXAMS.—Stuart Stanley R. (Tutor Sch. of Arch., Lon. Univ.) and G. A. Crockett, M.A./B.A., F./A.B.I.B.A., M./A.M.T.P.I. (Prof. Sir Patrick Abercrombie in assn.) prepare Students by correspondence tuition. 10, Adelaide Street, Strand, W.C.2. TEM. 1603/4.

UNIVERSITY OF MANCHESTER (FACULTY OF TECHNOLOGY).
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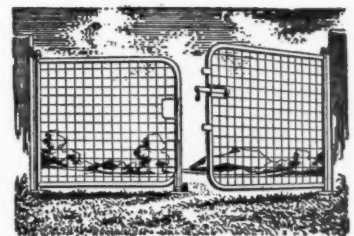
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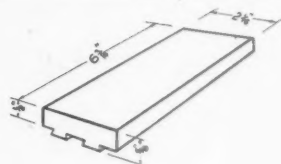
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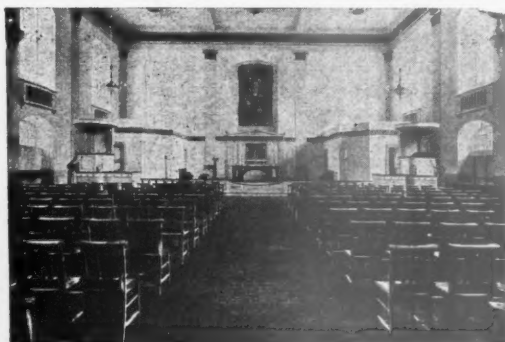
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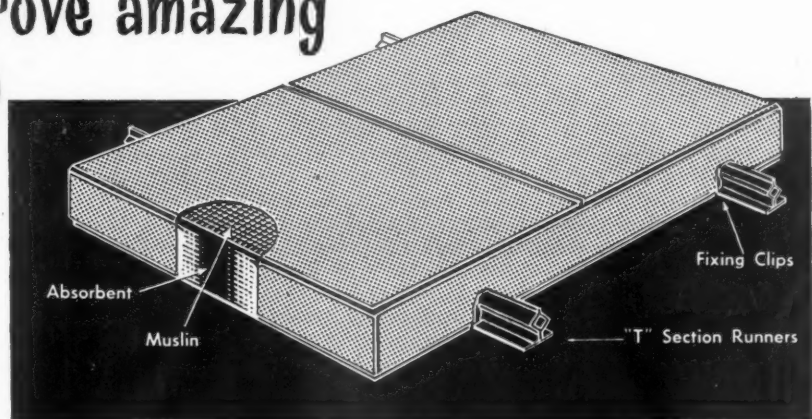
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